

# ABINGTON TOWNSHIP

OCTOBER 28, 2025



## PLANNING COMMISSION MEETING



# TOWNSHIP OF ABINGTON

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## PLANNING COMMISSION MEETING

### **A G E N D A** **October 28, 2025** **7:30 PM**

There are three ways for the public to participate in the meeting: in-person, online or by phone. Residents who wish to attend in person can do so in the Abington Township Board Room located at 1176 Old York Road, Abington, PA 19001, 2nd Floor. Alternative means of public participation are offered for those who do not wish to or are unable to attend the meetings in person. Residents who wish to participate in the meeting remotely can access the meeting online by a computer, iPad, iPhone, or Android at <https://uso6web.zoom.us/j/83637406019>. This link will enable residents to hear the meeting and see presentations. There will be no video capabilities. Residents, who are unable to join online, can listen to the meeting by calling 1-929-436-2866 and entering the meeting ID number 836-3740-6019 when prompted.

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#### **CALL TO ORDER**

**ROLL CALL**                    *BROWN, DICELLO, ROBINSON, BAKER, NEWELL, WEATHERLY*

#### **CONSIDER APPROVAL OF MINUTES**

- a. Consider Approving Planning Commission Minutes of August 26, 2025.

#### **PRESENTATION**

#### **UNFINISHED BUSINESS**

#### **NEW BUSINESS**

- a. Review LD-25-03 Noble Town Center South Parking Improvements - Preliminary/Final Land Development Plans.
- b. Discuss an Ordinance of Abington Township, Montgomery County, Pennsylvania, pursuant to Article V of the Pennsylvania Municipalities Planning Code amending the Abington Township Subdivision and Land Development Ordinance of 1991 to amend Section 146-51 to permit a waiver from the Land Development Plan approval process for a partial nonconforming structure restoration.

- c. Discuss an Ordinance of Abington Township, Montgomery County, Pennsylvania, pursuant to Article VI of the Pennsylvania Municipalities Planning Code amending the Abington Township Zoning Ordinance of 2017 to amend Section 1904 to allow partial reconstruction of a non-conforming building or structure for a permitted use.

**PUBLIC COMMENT**

**ADJOURNMENT**

**To subscribe and receive agenda posting notifications, please sign up on our website under *Email Updates* at [www.abingtonpa.gov/agendas](http://www.abingtonpa.gov/agendas)**

## **BOARD POLICY ON PUBLIC PARTICIPATION**

### *For Information Purposes Only*

The Township shall conduct business in accordance with the Commonwealth of Pennsylvania Laws governing the conduct of public meetings and only establish guidelines that shall govern public participation at meetings consistent with the law.

Each commenter shall:

- Direct their comments to the Presiding Officer;
- Speak from the podium or into a microphone designated by the presiding officer;
- State their name for the record;
- Either orally or in writing provide their address for the record;
- Have a maximum of three minutes to make their comments. Each commenter when speaking to a specific agenda item, is to keep their comments relative to that identified agenda item;
- Speak one time per agenda item;
- When commenting on non-agenda items, the commenter is to keep their comments related to matters of the Township of Abington, Montgomery County, Pennsylvania.
- State a question to the Presiding Officer after all commenters have spoken, and;
- Be seated after speaking or upon the request of the presiding officer;
- Not engage in debate, dialogue or discussion;
- Not disrupt the public meeting, and;
- Exercise restraint and sound judgement in avoiding the use of profane language, and the maligning of others.

The stated meeting of the Planning Commission of the Township of Abington was held on Tuesday, August 26, 2025 via webinar and in-person at the Township Administration Building, Abington, PA, with Chairman Nicholas Brown presiding.

**CALL TO ORDER:** 7:30 p.m.

**ROLL CALL:** Present: BROWN, DICELLO, BAKER, WEATHERLY  
Excused: ROBINSON, NEWELL

Also Present: Township Engineer Lee  
County Planner Narcowich

**PLEDGE OF ALLEGIANCE**

**CONSIDER APPROVAL OF MINUTES:**

Mr. Weatherly made a MOTION, seconded by Mr. Brown to approve the minutes from the Planning Commission Meeting of July 22, 2025.

MOTION was ADOPTED 4-0.

**PRESENTATION:** None.

**UNFINISHED BUSINESS:** None.

**NEW BUSINESS:**

Review LD-25-01-1526 Fairview Avenue, Preliminary/Final Major Subdivision and Land Development Plan:

Mr. Brown said the applicant is proposing to subdivide the existing 13,696 sq. ft. lot into two (2) new lots as follows: Lot 1 – will consist of a 7,500 sq. ft. lot fronting Fairview Avenue and will be comprised of a new single-family detached dwelling, asphalt driveway, concrete walkway, and raingarden. Lot 2 – will consist of a 6,469 sq. ft. lot fronting Fairview Avenue and will be comprised of the existing single-family detached dwelling unit. No improvements to Lot 2 are proposed as part of this application.

Ms. Kim Freimuth, Attorney representing the applicant, said the applicant received variances from the Zoning Hearing Board back in November to allow for the undersized lot and for a front yard setback, and since then, the applicant submitted the subdivision and land development plan. This is our second review by the Township's Engineer as well as the Township's Traffic Engineer. The applicant will comply with all comments; however, we have a list of updated waiver requests that we submitted last week to include approval for a one-stage preliminary/final land development plan process.

The existing dwelling will remain on Lot 2 and proposed is a new single-family dwelling on Lot 1 with a raingarden for stormwater management.

Ms. Allison Lee, Township Engineer, said regarding the waiver request letter dated August 18, 2025, Item #3 waiver from Section 146-11. A. (7) & 146-11. D. (4) – the applicant requests a waiver to not provide an indication of the vertical datum to the Sanitary Sewer Datum of the Township of Abington. Generally, the applicant withdraws this waiver as they can provide a conversion factor to get to the sanitary sewer datum, so they just need to add a note to convert to the sewer datum.

Mr. Scott Mill, Project Engineer representing the applicant, said he will confirm with the Township Engineer which is the correct datum to use for the conversion.

Ms. Allison Lee continued that the other waiver request from Section 146-33. G is to provide ADS drain basins or approved equal within the site. This is about the pipe being 2 feet below grade in which the applicant already complies, so if no new inlets are being proposed within the Fairview Avenue right-of-way, there is no need for this waiver.

Mr. Brown clarified that Items 3 and 6 as listed in the waiver request letter will be removed and one waiver request was added to consider approval of the plan as preliminary as final. Is that correct?

Mr. Mill replied yes.

Ms. Allison Lee said she supports all other waiver requests.

Mr. Brown asked for any comments from members of the Planning Commission.

Mr. Weatherly agreed that the two waivers as discussed are not needed.

Mr. Brown asked about Item #7 of the waivers that the sanitary sewer service to the dwelling basement be provided by gravity. Is that the point of emphasis?

Mr. Mill replied no, the point of emphasis is that it is required to service the basement level. Where the existing lateral comes in is about seven feet deep, so it doesn't get to the basement, and we will utilize the existing lateral from the street.

Mr. Brown noted that the EAC provided a review letter commending the applicant on the use of a raingarden and they recommended providing maintenance guidelines to whoever owns the home in the future.

Mr. Narcowich said street lighting should be installed along each street front; architectural plans are required; cartway width should be provided; regarding existing vegetation, each mature tree with a 10-inch caliper or greater shall be designated to remain or be removed; and a registered landscape architect should provide a landscape plan. In the zoning table, the build-to-line of the new home should be incorporated to say that the new home's build-to-line must be equal to the average of the front yards of the two referenced houses.

Mr. Mill replied we were not contemplating any street lighting at this time; however, we would be willing to install a lamppost. A landscape plan will be prepared by a registered landscape architect, and the architectural plans were submitted as well as the cartway width.

Mr. Weatherly said regarding street lighting, the applicant can validate whether that would be incompliance with the street lighting requirement to the satisfaction of the Township Engineer.

Ms. Freimuth agreed.

Ms. Allison Lee said we need to see whether there is adequate lighting for that street as well as for the proposed new dwelling, and if there is, then a streetlight will not be necessary, if not, we would appreciate it if a new streetlight were installed for safety reasons.

Mr. Brown asked for any public comment. There was none.

Mr. Brown made a MOTION, seconded by Mr. DiCello to recommend approval of this application inclusive of the waivers requested in the letter dated August 18, 2025, which are to approve a one-stage preliminary and final approval process; to not provide existing features within 400 ft of the property adjacent to the site; to not provide sidewalks along Fairview Avenue frontage; to allow the pipe cover per the manufacturer's recommendations as oppose to 24 inches; to allow to tie into the existing lateral connection from the existing house; to allow the maximum 3:1 slope and the slope will be permitted at the raingarden and no other portions of the property; approve waiver from requirement to infiltrate groundwater; and further review street lighting requirements with the Township to confirm that any submitted design is compliant.

MOTION was ADOPTED 4-0.

**ADJOURNMENT:**

8:04 p.m.

Respectfully submitted,

Liz Vile, Recording Secretary



PLANNING COMMISSION MEETING

AGENDA ITEM

October 28, 2025

DATE

Administration

DEPARTMENT

AGENDA ITEM NUMBER

FISCAL IMPACT

Cost > \$10,000

Yes  No

PUBLIC BID REQUIRED

Cost > \$20,100

Yes  No

AGENDA ITEM:

Noble Town Center South Parking Improvements

EXECUTIVE SUMMARY:

Under this submission, the Applicant is proposing to redevelop an approx. 36,289 SF portion of the existing southern parking lot which will result in a decrease in impervious area of approximately 860 SF. Other improvements associated with this redevelopment include new curbing, sidewalks, parking lot planting islands, retaining wall, stormwater inlets, and a subsurface stormwater management basin.

The Applicant is not requesting any variances as part of this Land Development Application.

PREVIOUS BOARD ACTIONS:

n/a

RECOMMENDED BOARD ACTIONS:

Review LD-25-03 Noble Town Center South Parking Improvements - Preliminary/Final Land Development Plans.





## ESCROW AGREEMENT FOR PROFESSIONAL REVIEW FEES FOR PRE-SUBMISSION MEETING

The undersigned hereby agrees to post an escrow to cover the costs of the review of subdivision and land development applications by the Township's Planner, Engineer(s), and Solicitor. The amount of said escrow shall be according to the attached "Schedule of Fees" and shall be posted at the time of initial submission of an application to the Township. Said fees shall be placed in an escrow account and any balance remaining shall be returned to the applicant subsequent to the receipt of final approval.

The applicant is advised that the "Schedule of Fees" represents only an estimate of the costs associated with plan review. The completeness and quality of the submission, the complexity of the project, the number of revisions and other factors may cause costs to exceed the established escrow amounts. If during the course of a subdivision/land development review an escrow amount falls to 10% of the original escrow amount or \$250, whichever is greater, the Township may require the posting of additional escrow.

NOTE: NO FINAL APPROVALS, CONSTRUCTION, BUILDING OR OCCUPANCY PERMITS SHALL BE ISSUED UNTIL ALL OUTSTANDING PROFESSIONAL REVIEW FEES HAVE BEEN SATISFIED.

Signature:   
Applicant

Date: 8/15/25



## APPLICATION FOR SUBDIVISION/LAND DEVELOPMENT

PROJECT NAME: Noble Town Center - South Parking Improvements

APPLICANT NAME: Paramount JSM at Jenkintown, LLC c/o Paramount Realty

### TO BE COMPLETED BY THE TOWNSHIP

#### Submission Information:

Application Number: <u>LD-25-03</u>	Date Complete: <u>09/08/2025</u>
Project Title: <u>Noble Town Center South Parking Improvements</u>	90 Day Date: <u>12/07/2025</u>
File Date: <u>09/02/2025</u>	Ward No.: <u>7</u>

### REQUIRED MATERIAL FOR ALL SUBDIVISION/LAND DEVELOPMENT APPLICATIONS:

1. This form **MUST** be completed and submitted.
2. A Subdivision/ Land Development Application **MUST** include all of the items listed in the application checklist in Section V to be considered complete.
3. Incomplete application will **NOT** be placed on the Planning Commission agenda. Incomplete applications will be returned to the applicant.
4. Complete applications must be received at least 45 DAYS (see schedule) prior to the Planning Commission meeting at which it will be heard.
5. Ten (10) full size paper copies, and one (1) 11x17 reduced copy of the plans, plus three (3) copies of each report or study are to be submitted in the initial submission of the complete application. A digital copy of all submitted documents must be included with the application.

**\*It is highly encouraged to submit applications in a digital format**



**I. CONTACT INFORMATION**

**Applicant  
Information**

Paramount JSM at Jenkintown, LLC c/o Paramount Realty  
Eric Kelly

Name

1195 Route 70, Suite 2000, Lakewood, NJ 08701

Address

732-886-1500

Phone

Fax

ekelly@paramountrealty.com

Email Address

**Property  
Owners  
Information  
(if different  
than applicant)**

Name

*Same as Applicant*

Address

Phone

Fax

Email Address

**Architect/  
Planner**

McGillin Architecture, Inc. c/o Howard V. Lebold

Name

Two Bala Plaza, Suite 502, Bala Cynwyd, PA 19004

Address

610-664-6577

Phone

Fax

hvl@mai.design

Email Address



**Engineer/  
Surveyor**

Langan Engineering c/o Brian M. Conlon

Name

1818 Market Street, Suite 3300, Philadelphia, PA 19103

Address

**Engineer/  
Surveyor  
Cont'd**

215-845-8900

Phone

Fax

Bconlon@Langan.com

Email Address

**Attorney**

Kaplin Stewart c/o Gregg I. Adelman

Name

Union Meeting Corporate Center, 910 Harvest Drive, Blue Bell, PA 19422

Address

610-941-2552

Phone

Fax

gadelman@kaplaw.com

Email Address



## II. PROJECT INFORMATION

### Application Type:

Minor Subdivision       Minor Land Develop.       Preliminary Major SD & LD  
 Preliminary Major Subdivision       Prelim. Major Land Develop.       Final Major SD & LD  
 Final Major Subdivision       Final Major Land Develop.

Full street address of the property: 901 Old York Road, Jenkintown, PA 19046

Tax Parcel No.: 30-00-49688-00-7 County Deed Book No.: \_\_\_\_\_ Page No.: \_\_\_\_\_

Description of Proposed Work: Re-tenanting ±68,642 SF of the existing building lower level into 4 retail spaces along with supporting infrastructure including parking, sidewalk, stormwater facilitates and utilities.

Total Tract Acreage: 17.927 Project Acreage: 0.83

Zoning District: BC Existing Number of Lots: 1 Proposed Number of Lots: 1

Existing Sewer Flows: TBD Proposed Sewer Flows: TBD

### Proposed Land Use:

Single Family Detached       Single Family Attached       Single Family Semi-Detached  
 Multi-Family       Commercial       Office       Industrial  
 Other (Describe): \_\_\_\_\_



### III. REVIEW

Please complete the following section by circling a response:

- |   |     |                          |
|---|-----|--------------------------|
| • Have you met with the Zoning Officer regarding this plan?   | Yes | <input type="radio"/> No |
| • Are there known variances/any zoning relief necessary for this project?*  | Yes | <input type="radio"/> No |
| • If YES, have you submitted an application to the Zoning Hearing Board?  | Yes | No                       |
| • Has this plan been heard by the Zoning Hearing Board?   | Yes | <input type="radio"/> No |
| • Has this plan been submitted to, considered by, or received any formal action by the Planning Commission or Board of Commissioners in the past? | Yes | <input type="radio"/> No |

\*Please be advised that if any variances are found to be necessary during the course of the review of this plan, you will be required to go to the Zoning Hearing Board prior to proceeding to the Planning Commission. In addition, you will be requested to grant the Township a waiver to the 90-day action period or an immediate denial of this application will be made, and you will be required to resubmit the application.

It is recommended that ALL Land Development and Major Subdivision applications have a pre-submission meeting to discuss the project prior to full application submittal.

Minor Subdivision applications may request a pre-submission meeting; if one is desired.

Meetings are typically held the fourth Tuesday of each month at the Township Administrative Offices.

Applicants assume responsibility of any fees associated with this meeting.

Applicant signature 

8/15/25  
Date

To schedule a pre-submission meeting, please contact the Office of the Township Manager at 267-536-1022 or email [TCastorina@abingtonpa.gov](mailto:TCastorina@abingtonpa.gov)





## V. SUBMISSION

### APPLICATION CHECKLIST

The applicant is responsible for the submission of a complete application. This checklist will aid both the applicant and staff in ensuring that all applications are complete. The following is a per item submission checklist for all Subdivision, Land Development and Conditional Use Applications for the Township of Abington.

- Application Form: completed and signed by the owner/applicant
- 10 (ten) copies of the proposed plan, folded to legal file size. Plan should not be smaller than 1" = 50' and not exceed a sheet size of 24" x 36"
- One (1) reduced copy of the proposed plan, no larger than 11" x 17"
- Two (2) sets of tentative architectural plans for all applications proposing construction or land development
- One (1) copy of the Recreation Facilities Plan (if required by §146-40)
- Letter of Sanitary Sewer availability from the Township Wastewater Treatment Department
- Two (2) copies of Sewage Facilities Planning Module Applications
- Letter of Water availability from AQUA PA
- One (1) copy of any previous Zoning Hearing Board decisions related to the subject property
- One (1) digital copy of all submitted documents
- Application Fee: Check made payable to the Township of Abington
- Escrow Fee: Check made payable to the Township of Abington. Separate check from application fee

## VI. SIGNATURE

The undersigned represents that to the best of his/her knowledge and belief, all the above statements are true, correct, and complete.

Signature of Applicant

Date

Signature of Property Owner (if different than applicant)

Date



**THE FOLLOWING IS FOR INTERNAL USE ONLY:**

**PAYMENT**

\_\_\_ Application Fee      Amount: \$ \_\_\_\_\_      Check No.: # \_\_\_\_\_

\_\_\_ Review Escrow Fee      Amount: \$ \_\_\_\_\_      Check No.: # \_\_\_\_\_

**DECISION INFORMATION**

Approval \_\_\_\_\_      Denial \_\_\_\_\_      Decision Date: \_\_\_\_\_

Comments/Conditions: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



## PLANNING PROCESS EXTENSION AGREEMENT

FOR

Noble Town Center - South Parking Improvements

PROJECT NAME

The Pennsylvania Municipality Planning Code (MPC) and the Abington Township Subdivision and Land Development Ordinance state that action must be taken by the Township within ninety (90) days after a complete application is filed with the Township. In the Township, complicated, unique, and community impactful projects have or may require additional time in order to complete a thorough review before being considered for approval. As such, an applicant may voluntarily waive the timing requirement at any time, but is encouraged to submit this waiver with the completed application.

I, the applicant, hereby voluntarily waive the timing requirement as set forth in the MPC (Section 53 P.S. 10508) and the Abington Township Subdivision and Land Development Ordinance (Section 146-13). Applicant acknowledges that this waiver can be revoked at any time upon written notice to the Township Manager. The time limitations set forth in 53 P.S. 10508 and Section 146-13 of the Abington Township Code shall be calculated from the date that the written revocation is received by the Township Manager.

Signed: \_\_\_\_\_  
Applicant

Date: \_\_\_\_\_

Received: \_\_\_\_\_  
Township

Date: \_\_\_\_\_



## ESCROW AGREEMENT FOR PROFESSIONAL REVIEW FEES FOR SUBDIVISION/LAND DEVELOPMENT APPLICATIONS

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Signed:   
Applicant

Date: 8/15/25

# PRELIMINARY AND FINAL LAND DEVELOPMENT PLAN

## FOR

# NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS

### SITUATED IN:

## ABINGTON TOWNSHIP

## MONTGOMERY COUNTY, PENNSYLVANIA

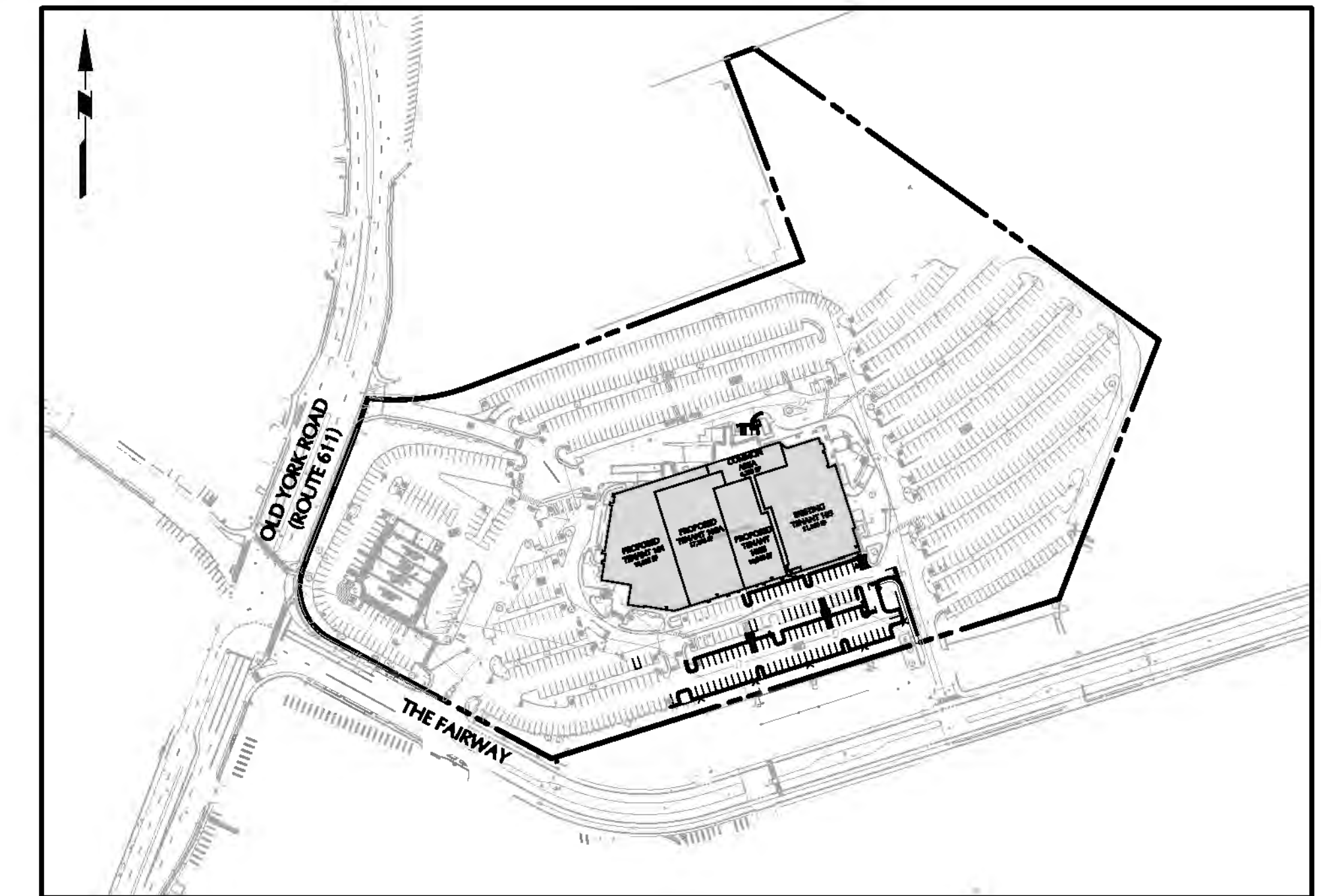
Project No. 001234501



**LOCATION MAP**  
1"=1000'

DRAWING INDEX				
DRAWING SEQUENCE	DRAWING NUMBER	DRAWING TITLE	ORIGINAL DATE	DRAWING REVISION
1	GI-001	COVER SHEET	12 AUGUST 2025	--
2	GI-101	TAX MAP & ZONING MAP	12 AUGUST 2025	--
3	VT-101	BOUNDARY AND TOPOGRAPHIC SURVEY	6 AUGUST 2024	--
4	CD-100	SITE DEMOLITION PLAN	12 AUGUST 2025	--
5	CS-100	OVERALL SITE PLAN	12 AUGUST 2025	--
6	CS-101	SITE PLAN	12 AUGUST 2025	--
7	CS-501	SITE CONSTRUCTION DETAILS	12 AUGUST 2025	--
8	CG-101	GRADING PLAN	12 AUGUST 2025	--
9	CG-102	DRAINAGE PLAN	12 AUGUST 2025	--
10	CG-201	STORM SEWER PROFILES	12 AUGUST 2025	--
11	CG-501	GRADING AND DRAINAGE NOTES & DETAILS I	12 AUGUST 2025	--
12	CG-502	GRADING AND DRAINAGE NOTES & DETAILS II	12 AUGUST 2025	--
13	CG-503	GRADING AND DRAINAGE NOTES & DETAILS III	12 AUGUST 2025	--
14	CE-101	SOIL EROSION & SEDIMENT CONTROL PLAN	12 AUGUST 2025	--
15	CE-501	SOIL EROSION & SEDIMENT CONTROL DETAILS	12 AUGUST 2025	--
16	CE-502	SOIL EROSION & SEDIMENT CONTROL NOTES	12 AUGUST 2025	--
17	CU-101	UTILITY PLAN	12 AUGUST 2025	--
18	CU-501	UTILITY NOTES & DETAILS	12 AUGUST 2025	--

**PROJECT SITE:**  
 LOT AREA = 17.927 ACRES  
 ZONING DISTRICT: BUSINESS CENTER (BC)  
 ADDRESS: 901 OLD YORK ROAD, JENKINTOWN PA, 19046



**SITE MAP**  
1"=200'

**GENERAL SITE NOTES**

- THESE PLANS REPRESENT THE OVERALL SITEWORK IMPROVEMENTS REQUIRED FOR PROJECT CONSTRUCTION. THE CONTRACTOR SHALL FURNISH, INSTALL, TEST AND COMPLETE ALL WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION; AS SUCH, THESE PLANS DO NOT COMPLETELY REPRESENT, NOR ARE THEY INTENDED TO REPRESENT, ALL SPECIFIC INSTRUCTIONS REQUIRED FOR SITEWORK CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT ALL APPLICABLE RULES, REGULATIONS AND LAWS IN EFFECT AT THE TIME OF CONSTRUCTION.
- THE CONTRACTOR SHALL ACCEPT THE SITE AS IS. THE CONTRACTOR SHALL ASSESS CONDITIONS, AND THE KIND, QUALITY AND QUANTITY OF WORK REQUIRED. THE OWNER MAKES NO GUARANTEE IN REGARD TO THE ACCURACY OF ANY AVAILABLE INFORMATION WHICH WAS OBTAINED DURING INVESTIGATIONS. THE CONTRACTOR SHALL MAKE A THOROUGH SITE INSPECTION IN ORDER TO FIELD CHECK EXISTING SITE CONDITIONS, CORRELATE CONDITIONS WITH THE DRAWINGS AND RESOLVE ANY POSSIBLE CONSTRUCTION CONFLICTS WITH THE OWNER AND ENGINEER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL MAKE ADDITIONAL TOPOGRAPHIC SURVEYS HE DEEMS NECESSARY, PROVIDED THEY ARE COORDINATED WITH THE OWNER. ANY CONDITIONS DETERMINED BY THE CONTRACTOR THAT DIFFER FROM THE INFORMATION SHOWN ON THE DRAWINGS THAT ARE NOT BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO THE START OF WORK SHALL NOT BE CONSIDERED GROUNDS FOR ADDITIONAL PAYMENT OR CHANGES TO THE CONTRACT DURATION, OR ANY OTHER CLAIMS AGAINST THE OWNER OR OWNER'S ENGINEER.
- THE CONTRACTOR SHALL, WHEN THEY DEEM NECESSARY, PROVIDE WRITTEN REQUESTS FOR INFORMATION (RFIs) TO THE OWNER AND ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITEWORK ITEM. THE (RFI) SHALL BE IN A FORM ACCEPTABLE TO OWNER AND ENGINEER AND SHALL ALLOW FOR A MINIMUM OF TWO WORK DAYS FOR ADDITIONAL REASONABLE TIME FOR A WRITTEN REPLY. RFIs SHALL BE NUMBERED CONSECUTIVELY BY DATE SUBMITTED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITEWORK ITEMS CONSTRUCTED DIFFERENTLY THAN INTENDED OR AS DEPICTED ON THE PLANS.
- INFORMATION RELATED TO ELEVATIONS AND PROPOSED UTILITIES (SUCH AS ROADWAY GRADES, INVERT ELEVATIONS, RIM ELEVATIONS, GRATE ELEVATIONS, BUILDING FINISHED FLOOR ELEVATIONS, ETC.) MAY BE FOUND IN MORE THAN ONE LOCATION IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL SUFFICIENTLY REVIEW ALL PLANS, PROFILES AND ANY OTHER INFORMATION IN THE CONTRACT DOCUMENTS FOR CONSISTENCY PRIOR TO CONSTRUCTION. ANY INCONSISTENCIES OR DISCREPANCIES THAT ARE FOUND BY THE CONTRACTOR OR HIS ASSIGNS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER IN WRITING, IN THE FORMAT OF AN RFI PRIOR TO CONSTRUCTION.
- THERE ARE ADDITIONAL NOTES, SPECIFICATIONS AND REQUIREMENTS CONTAINED THROUGHOUT THE PLAN SET AS WELL AS REFERENCES TO SPECIFICATIONS FROM APPLICABLE GOVERNING AUTHORITIES AND INDUSTRY STANDARDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN, REVIEW AND ADHERE TO ALL THESE DOCUMENTS.



**ACT 287 AS AMENDED**

IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH THE PENNSYLVANIA ACT 181 OF 2008 AND TO CONTACT THE "ONE CALL SYSTEM" THREE (3) WORKING DAYS (UNLESS OTHERWISE NOTED) PRIOR TO START OF CONSTRUCTION.

PENNSYLVANIA ONE CALL 1-800-242-1776  
 SERIAL NO. 2016264291-000

<p><b>AQUA AMERICA INC.</b>                  700 W. SPROUL ROAD                  SPRINGFIELD, PA 19064                  (677) 987-2782</p> <p><b>PECO ENERGY COMPANY</b>                  2301 MARKET STREET, 510-1                  PHILADELPHIA, PA 19103                  (800) 484-4000</p> <p><b>ABINGTON TOWNSHIP COMMUNITY DEVELOPMENT</b>                  1175 OLD YORK ROAD                  ABINGTON, PA 19001                  (215) 636-1019</p> <p><b>MONTGOMERY COUNTY PLANNING COMMISSION</b>                  425 SWEDER STREET                  NORRISTOWN, PA 19401                  (610) 278-3722</p> <p><b>MONTGOMERY COUNTY SOIL CONSERVATION DISTRICT</b>                  425 SWEDER STREET                  NORRISTOWN, PA 19401                  (610) 278-3722</p>	<p><b>VERIZON PENNSYLVANIA</b>                  1050 VIRGINIA DRIVE                  FORT WASHINGTON, PA 19034                  (877) 728-6101</p> <p><b>COMCAST CABLE COMMUNICATIONS INC.</b>                  33 INDUSTRIAL DR                  IVYLAND, PA 18974                  (215) 918-3137</p> <p><b>ABINGTON TOWNSHIP WASTEWATER UTILITIES DEPARTMENT</b>                  1000 FITZWATERTOWN ROAD                  ABINGTON, PA 19001                  (215) 884-8329</p> <p><b>PENNSYLVANIA DEPARTMENT OF TRANSPORTATION</b>                  1101 S. FRONT STREET                  HARRISBURG, PA 17104                  (717) 412-5300</p>
--	--

**APPLICANT / OWNER:**

**PARAMOUNT JSM AT JENKINTOWN, LLC**  
**PARAMOUNT REALTY**  
 1195 ROUTE 70, SUITE 2000  
 LAKEWOOD, NJ 08701  
 PHONE: (732) 886-1500

**CIVIL ENGINEER:**

**LANGAN**

1818 Market Street, Suite 3300, Philadelphia, PA 19103  
 T: 215.845.8900 F: 215.845.8901 www.langan.com

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. S.A.  
 Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.  
 Langan Engineering and Environmental Services, Inc.  
 Langan CT, Inc.  
 Langan International LLC  
 Collectively known as Langan

ON THE DAY OF \_\_\_\_\_ A.D. 20\_\_\_\_ BEFORE ME, THE SUBSCRIBER, A NOTARY PUBLIC OF THE COMMONWEALTH OF PENNSYLVANIA, RESIDING IN \_\_\_\_\_ PERSONALLY APPEARED \_\_\_\_\_ (NAME OF OFFICER OF THE CORPORATION), WHO ACKNOWLEDGED (HIMSELF/HERSELF) TO BE THE (PRESIDENT OR SECRETARY), BEING AUTHORIZED TO DO SO, (HE/SHE) EXECUTED THE (PRECEDING PLAN BY SIGNING THAT SAID CORPORATION IS THE OWNER OF THE DESIGNATED LAND, THAT ALL NECESSARY APPROVAL OF THE PLAN HAS BEEN OBTAINED AND IS ENDORSED THEREON AND THAT SAID CORPORATION DESIRES THAT THE FOREGOING PLAN MAY BE DULY RECORDED.

\_\_\_\_\_  
 NOTARY PUBLIC

\_\_\_\_\_  
 MY COMMISSION EXPIRES \_\_\_\_\_

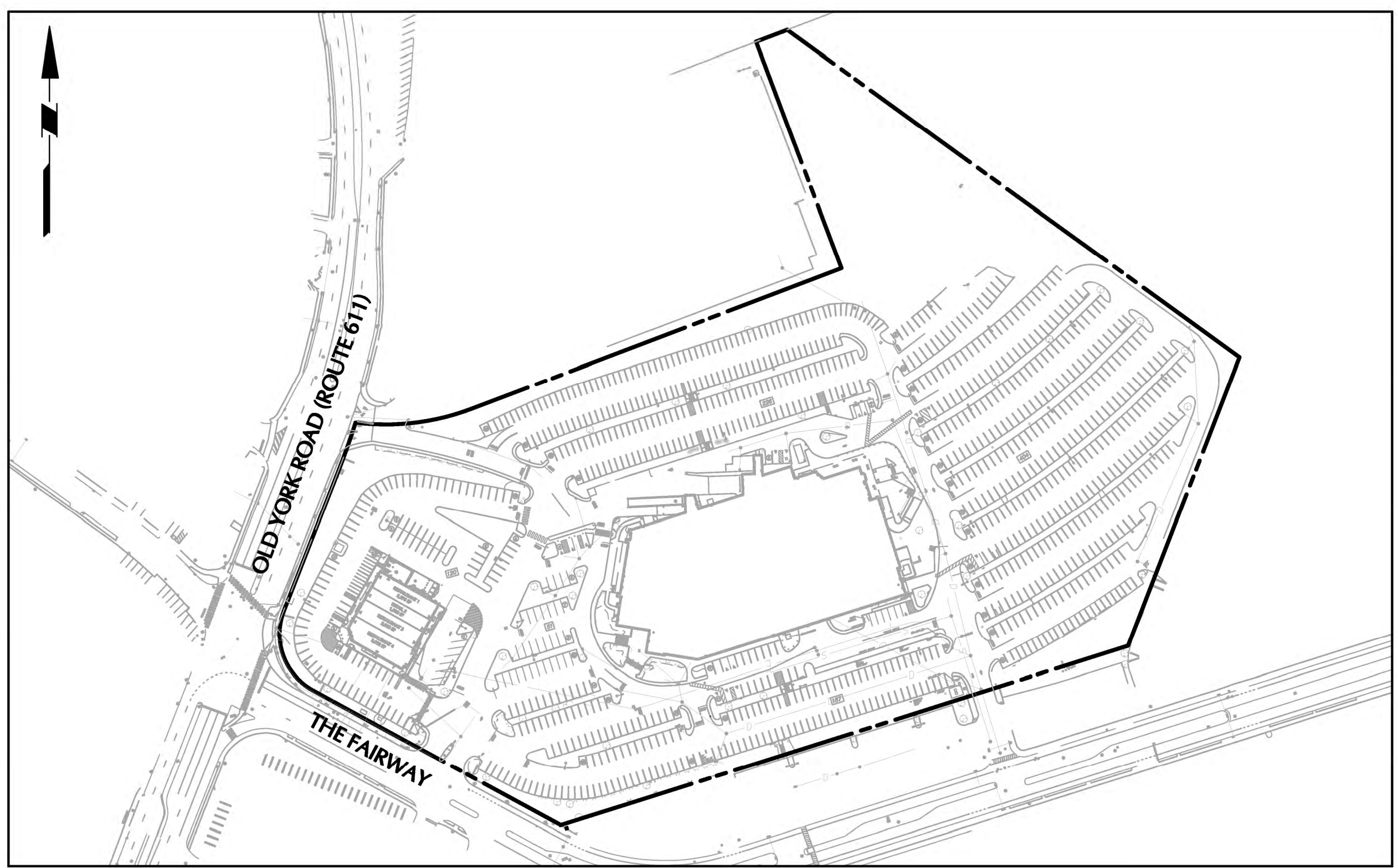
APPROVED BY THE BOARD OF COMMISSIONERS OF THE TOWNSHIP OF ABINGTON THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_.

ATTEST \_\_\_\_\_ PRESIDENT  
 \_\_\_\_\_ SECRETARY  
 \_\_\_\_\_ ENGINEER

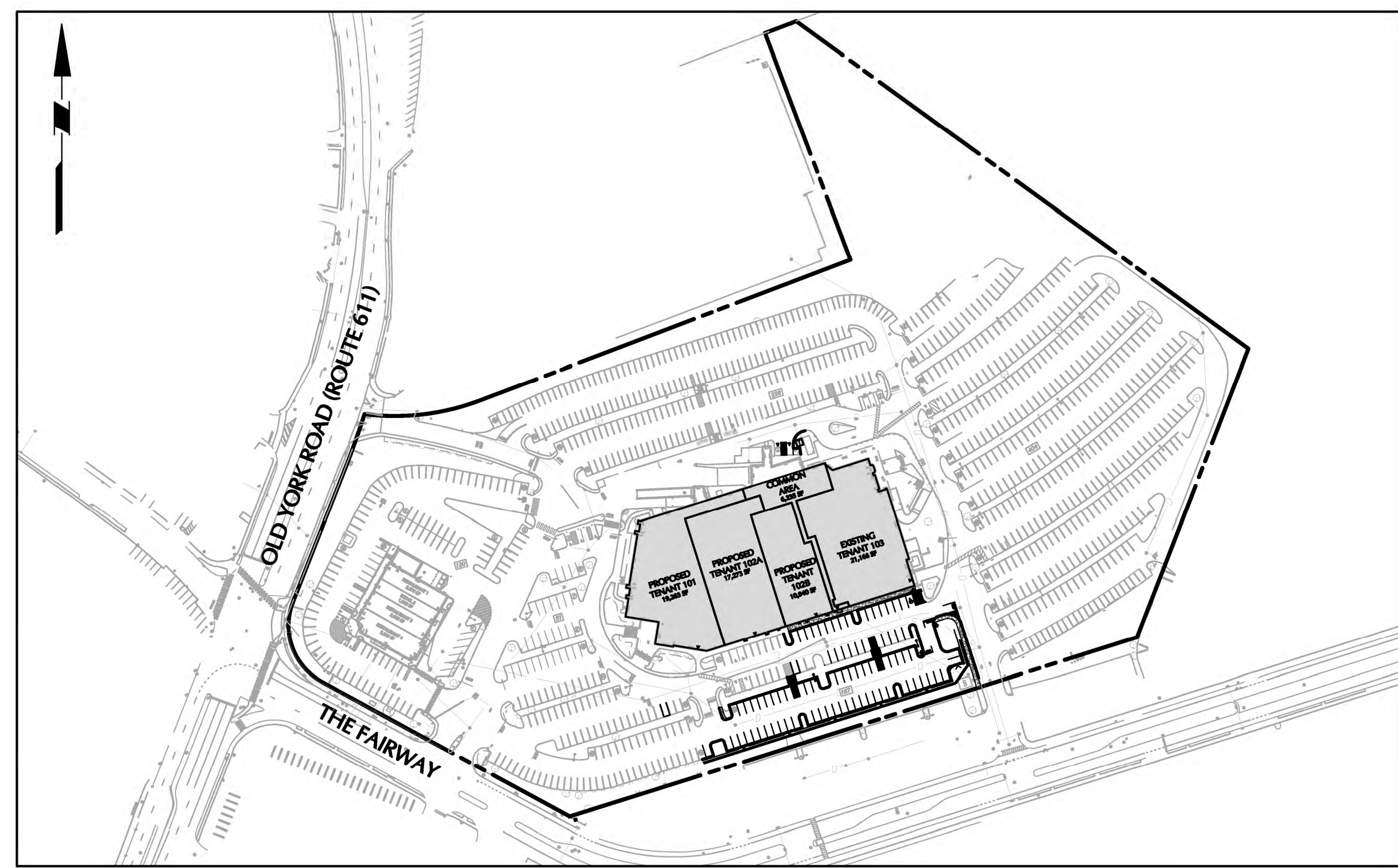
CERTIFIED BY THE MONTGOMERY COUNTY PLANNING COMMISSION THIS DAY OF \_\_\_\_\_, 20\_\_\_\_, FILE NO. \_\_\_\_\_.

ATTEST \_\_\_\_\_ SECRETARY

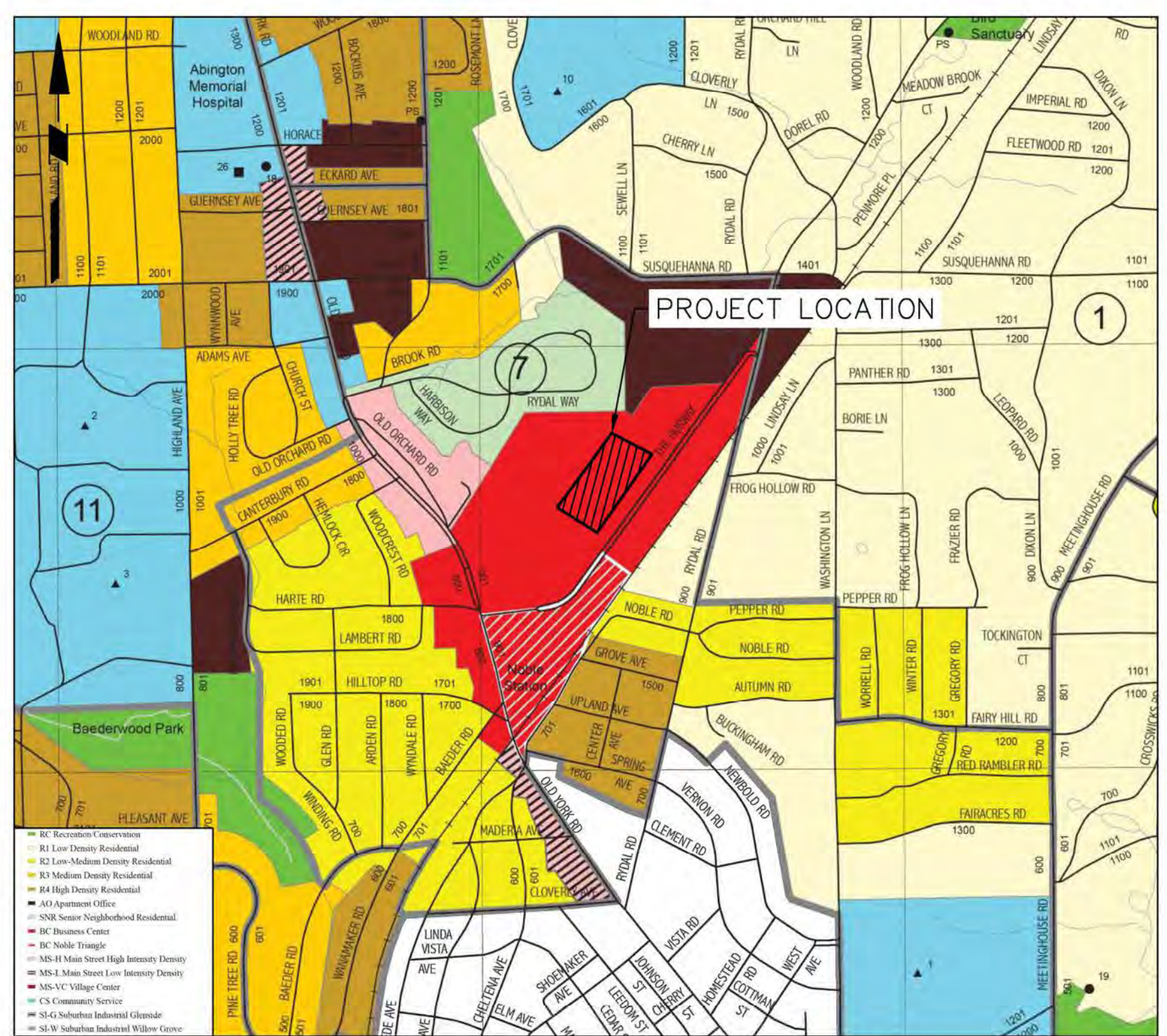
 BRIAN M. CONLON PROFESSIONAL ENGINEER PA Lic. No. PE061782	Project No. <b>220154401</b>	GI-001
	Date <b>12 AUGUST 2025</b>	
	Drawn By <b>TH/AEB</b>	
	Checked By <b>BMC</b>	
Sheet 1 of 18		



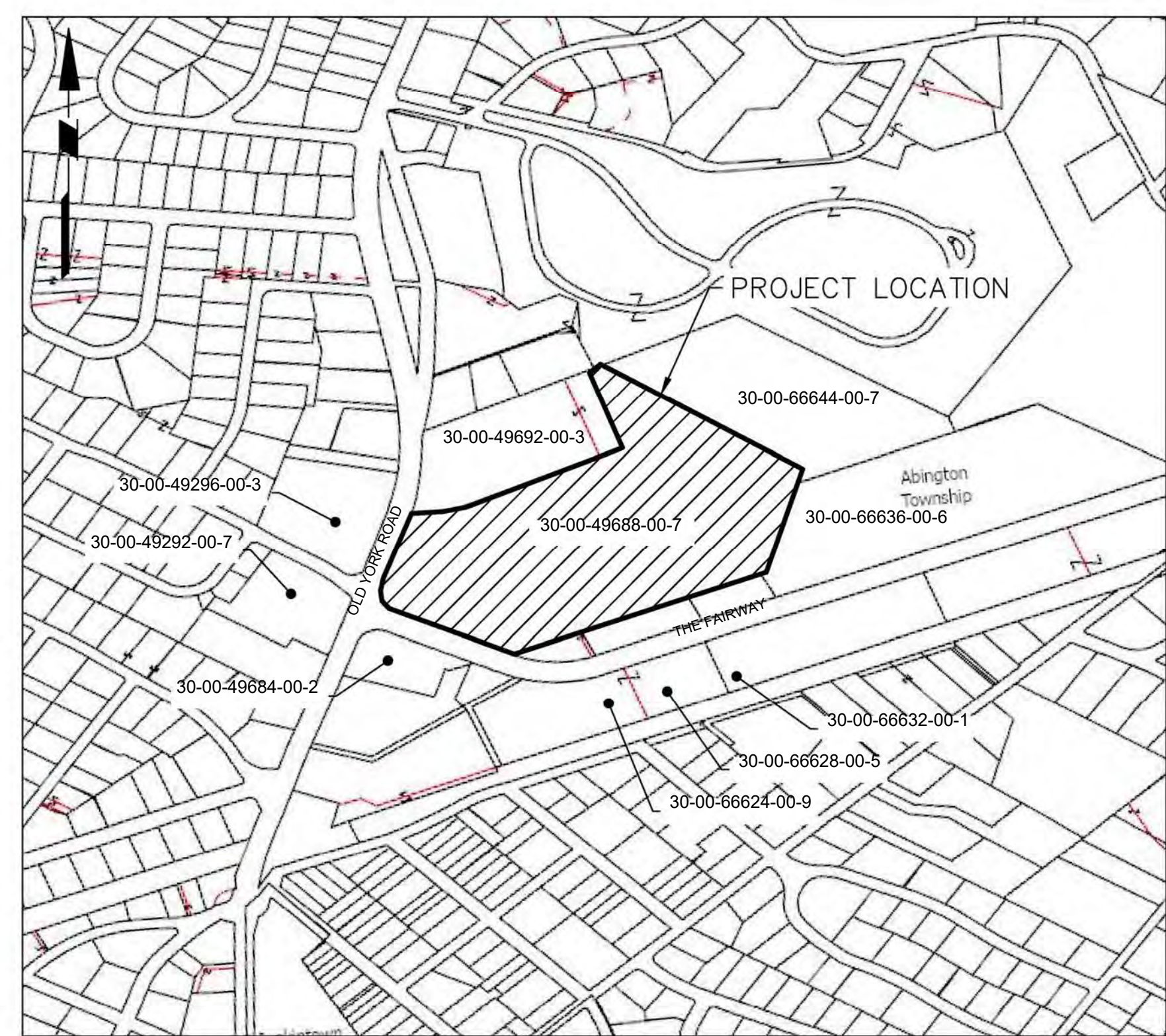
**EXISTING CONDITIONS PLAN**  
SCALE: 1"=250'



**PROPOSED SITE PLAN**  
SCALE: 1"=250'

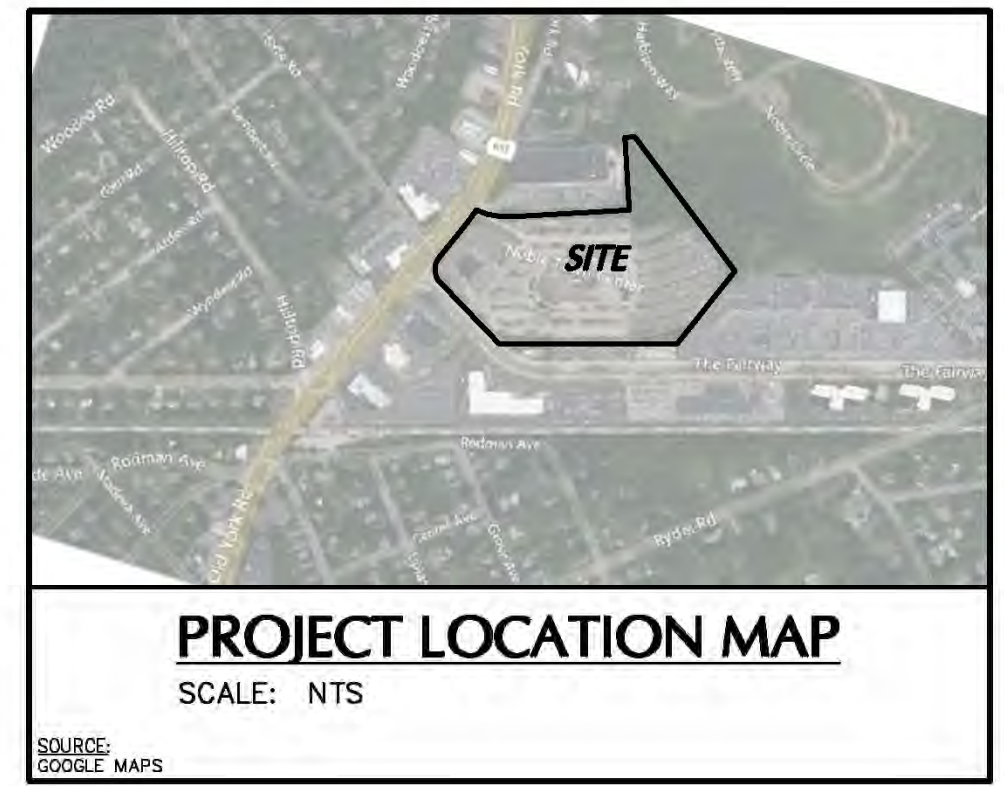


**ZONING MAP - ABINGTON TOWNSHIP**  
MONTGOMERY COUNTY, PA  
SCALE: 1"=1,000'



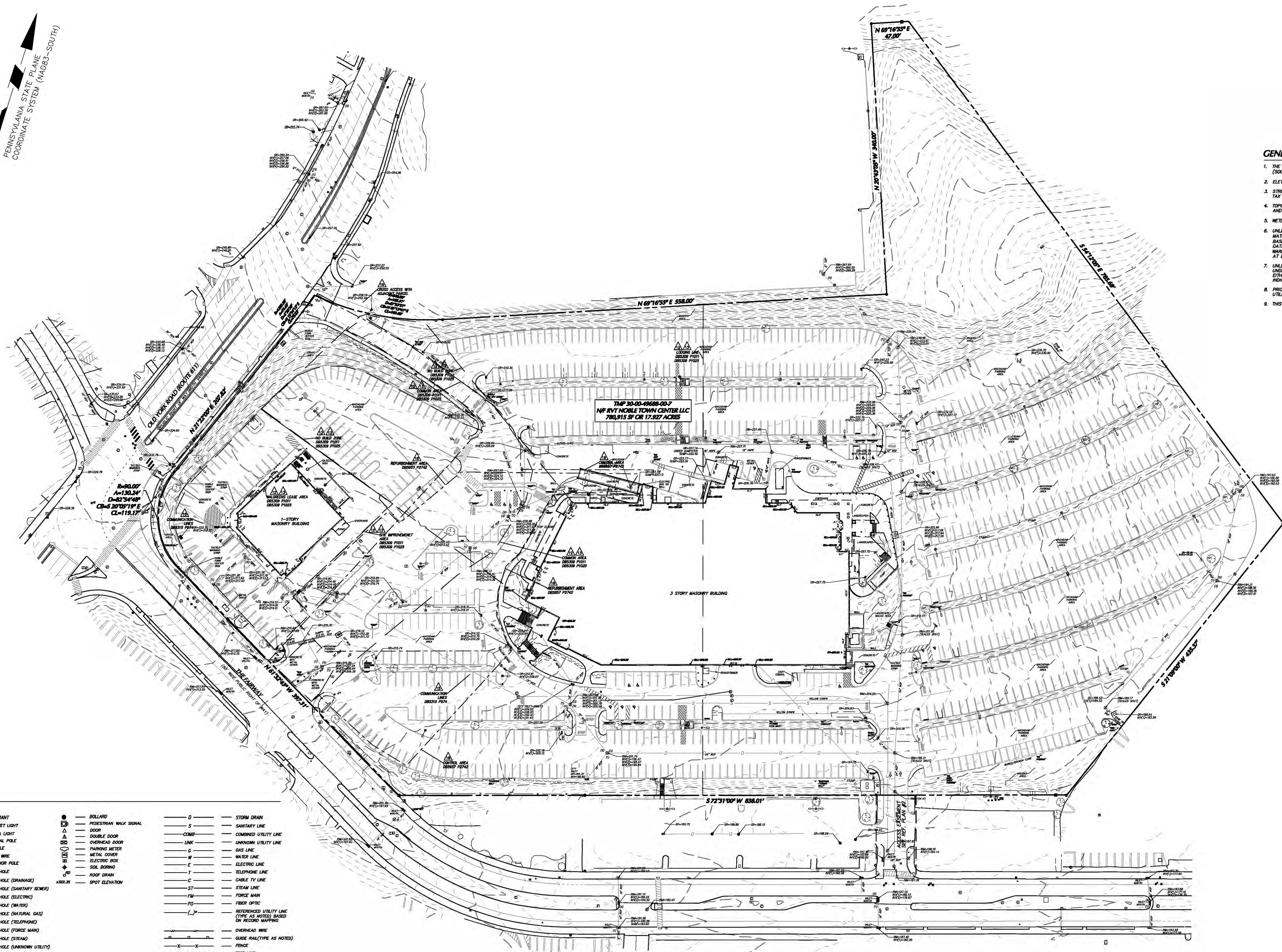
**TAX MAP - ABINGTON TOWNSHIP**  
MONTGOMERY COUNTY, PA  
SCALE: 1"=500'

Date	Description	No.
Revisions		
BRIAN M. CONLON PROFESSIONAL ENGINEER PA Lic. No. PE061782		
Langan Engineering and Environmental Services, Inc. 1818 Market Street, Suite 3300 Philadelphia, PA 19103 T: 215.845.8900 F: 215.845.8901 www.langan.com		
Project <b>NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS</b> ABINGTON TOWNSHIP MONTGOMERY COUNTY PENNSYLVANIA		
Drawing Title <h2 style="text-align: center;">TAX MAP &amp; ZONING MAP</h2>		
Project No.	<h1 style="font-size: 2em;">GI-101</h1>	
Date		
Drawn By		
Checked By		
220154401 12 AUGUST 2025 TFH/AEB BMC	Sheet 2 of 18	



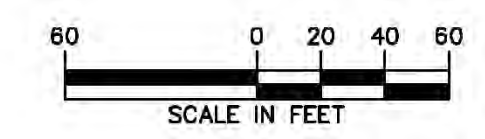
- GENERAL NOTES**
1. THE MERIDIAN OF THIS SURVEY IS REFERENCED TO THE PENNSYLVANIA STATE PLANE COORDINATE SYSTEM NAD 83 (SOUTH)
  2. ELEVATIONS SHOWN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
  3. STREET NAMES, RIGHT OF WAY WIDTHS, BLOCK AND LOT NUMBERS ARE SHOWN IN ACCORDANCE WITH THE TOWNSHIP TAX MAPS
  4. TOPOGRAPHIC INFORMATION SHOWN HEREON HAS BEEN OBTAINED FROM GROUND SURVEYS BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC. PERFORMED JULY THROUGH SEPTEMBER, 2022
  5. WETLANDS, ENVIRONMENTAL AND/OR HAZARDOUS MATERIALS LOCATION, IF ANY, NOT COVERED UNDER THIS CONTRACT.
  6. UNLESS SPECIFICALLY NOTED HEREON, STORM AND SANITARY SCHEM INFORMATION (INCLUDING PIPE INVERT, PIPE MATERIAL AND PIPE SIZE) WAS OBSERVED AND MEASURED AT FIELD LOCATED STRUCTURES (MANHOLES, CATCH BASINS, ETC.). CONDITIONS CAN VARY FROM THOSE ENCOUNTERED AT THE TIMES WHEN AND THE LOCATIONS WHERE DATA WAS OBTAINED. DESPITE MEETING THE REQUIRED STANDARD OF CARE, THE SURVEYOR CANNOT AND DOES NOT WARRANT THAT PIPE MATERIAL AND/OR PIPE SIZE THROUGHOUT THE PIPE RUN ARE THE SAME AS THOSE OBSERVED AT EACH STRUCTURE, OR THAT THE PIPE RUN IS STRAIGHT BETWEEN THE LOCATED STRUCTURES.
  7. UNLESS SPECIFICALLY NOTED HEREON THE SURVEYOR HAS NOT INDICATED TO PHYSICALLY LOCATE THE UNDERGROUND UTILITIES. THE SURVEYOR MAKES NO GUARANTEES THAT THE SHOWN UNDERGROUND UTILITIES ARE EITHER IN SERVICE, ABANDONED OR SUITABLE FOR USE, NOR ARE IN THE EXACT LOCATION OR CONFIGURATION INDICATED HEREON.
  8. PRIOR TO ANY DESIGN OR CONSTRUCTION THE PROPER UTILITY AGENCIES MUST BE CONTACTED FOR VERIFICATION OF UTILITY TYPE AND FOR FIELD LOCATIONS
  9. THIS PLAN NOT VALID UNLESS EMBOSSED WITH THE SEAL OF THE PROFESSIONAL.

PENNSYLVANIA STATE PLANE  
COORDINATE SYSTEM (NAD83-SOUTH)



**LEGEND**

HYDRANT	BOLLARD	STORM DRAIN
PEDESTRIAN WALK SIGNAL	DOOR	SANITARY LINE
SIGNAL LIGHT	DOUBLE DOOR	COMB. COMBINED UTILITY LINE
AREA LIGHT	OVERHEAD DOOR	UNKNOWN UTILITY LINE
SIGNAL POLE	PARKING METER	GAS LINE
POLE	METAL COVER	WATER LINE
UTILITY WIRE	ELECTRIC BOX	ELECTRIC LINE
ANCHOR POLE	SOL. BORING	TELEPHONE LINE
MANHOLE	ROOF DRAIN	CABLE TV LINE
MANHOLE (DRAINAGE)	SPOT ELEVATION	STEAM LINE
MANHOLE (SANITARY SEWER)		FORCE MAIN
MANHOLE (ELECTRIC)		FIBER OPTIC
MANHOLE (WATER)		REFERENCED UTILITY LINE (TYPE AS NOTED BASED ON RECORD MAPPING)
MANHOLE (NATURAL GAS)		OVERHEAD WIRE
MANHOLE (TELEPHONE)		GUIDE RAIL (TYPE AS NOTED)
MANHOLE (FORCE MAIN)		FENCE
MANHOLE (STEAM)		TREE LINE
MANHOLE (UNKNOWN UTILITY)		EASEMENT LINE
WATER VALVE		PROPERTY LINE
GAS VALVE		RIGHT-OF-WAY LINE
SHRUB		CONTOUR LINE
CATCH BASIN		
CLEAN OUT		
TREE		
SOIL		



Date	Description	No.
REVISIONS		
SIGNATURE		DATE SIGNED
		08-06-24
<b>LANGAN</b> Langan Engineering and Environmental Services, LLC 1818 Market Street, Suite 3300 Philadelphia, PA 19103 T: 215.845.8900 F: 215.845.8901 www.langan.com		

Project

**NOBLE TOWN CENTER**  
TMP 30-00-49688-00-7

ABINGTON TOWNSHIP  
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title

**BOUNDARY AND TOPOGRAPHIC SURVEY**

Project No. <b>220154401</b>	Drawing No. <b>VT101</b>
Date <b>08-06-24</b>	
Drawn By <b>DTT</b>	
Checked By <b>SFH</b>	

Sheet 1 of 1

**SITE DEMOLITION NOTES:**

- THIS PLAN IS PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY TO IDENTIFY THE LIMITS OF DEMOLITION AND SHALL NOT BE CONSIDERED AS INCLUSIVE. ADDITIONAL ITEMS MAY BE FOUND THAT SHALL BE DEMOLISHED. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ACTUAL LIMITS & EXTENTS OF DEMOLITION.
- THE CONTRACTOR SHALL REVIEW AND COMPLY WITH ALL PROVISIONS OF ABINGTON TOWNSHIP, AND OTHER JURISDICTIONAL AGENCIES. DEMOLITION AND REMOVAL SHALL BE PERFORMED IN ACCORDANCE WITH SAID REGULATIONS AS WELL AS THE EROSION CONTROL PLANS, SPECIFICALLY THE CONSTRUCTION STAGGS.
- THE CONTRACTOR IS TO PROVIDE EROSION AND SEDIMENTATION CONTROL MEASURES PER APPROVED PLAN PRIOR TO THE START OF EARTH DISTURBING ACTIVITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS INCLUDING, BUT NOT LIMITED TO, SIDEWALK/STREET CLOSING, DEMOLITION, DISPOSAL, AND ASBESTOS ABATEMENT.
- CONTRACTOR SHALL MAINTAIN ALL EXISTING PARKING, SIDEWALKS, DRIVES, ETC. CLEAR AND FREE FROM ANY CONSTRUCTION ACTIVITY AND/OR MATERIAL TO ENSURE EASY AND SAFE PEDESTRIAN AND VEHICULAR TRAFFIC TO AND FROM THE SITE. CONTRACTOR MUST PROTECT THE PUBLIC AT ALL TIMES WITH FENCING, BARRICADES, ENCLOSURES, ETC. TO THE BEST PRACTICES. CONTRACTOR MUST COORDINATE WITH OWNER PRIOR TO ANY CONSTRUCTION TO ESTABLISH CUSTOMER ACCESS AND TRAFFIC FLOW DURING ALL PHASES OF WORK. CONTINUOUS ACCESS SHALL BE MAINTAINED FOR THE PROPERTY AT ALL TIMES DURING DEMOLITION OF THE EXISTING FACILITIES. CONTRACTOR SHALL COORDINATE/PHASE ALL CONSTRUCTION ACTIVITY AND UTILITY INTERRUPTIONS WITH THE OWNER TO MINIMIZE DISTURBANCE AND INCONVENIENCE TO EXISTING SHOPPING CENTER OPERATION AND THE CUSTOMERS.
- THE CONTRACTOR SHALL MAINTAIN AND PROTECT ALL OFFSITE PROPERTY AND STRUCTURES FROM ANY AND ALL DAMAGE DURING THE DEMOLITION OPERATION. THE CONTRACTOR SHALL USE ANY NECESSARY PROTECTIVE SCREENS, PLATFORMS, BRACING, UNDERPINNING, ETC. TO PROTECT OFFSITE PROPERTY. ANY DAMAGE CAUSED BY THE CONTRACTOR OR HIS AGENTS SHALL BE IMMEDIATELY REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- THE CONTRACTOR SHALL INSPECT THE SITE THOROUGHLY AND FIELD VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES AND LATERALS, UNDERGROUND ELECTRIC, TELEPHONE, WALLS, GAS, WATER MAINS, ETC. ARE APPROXIMATE AND MUST BE FIELD VERIFIED. UTILITY INFORMATION HAS BEEN COMPILED FROM FIELD SURVEYS PERFORMED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES AND FROM UTILITY COMPANY RECORD PLANS. OTHER UTILITIES MAY ALSO EXIST. ALL CONTRACTORS USING THESE PLANS FOR DEMOLITION SHALL CONFIRM ALL UTILITIES IN THE FIELD FOR EXACT LOCATIONS, SIZES, MATERIALS, AND ELEVATIONS.
- ALL EXISTING SEWERS, PIPING AND UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES. GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PROCEEDING WITH THE WORK. UTILITIES DETERMINED TO BE ABANDONED AND LEFT IN PLACE SHALL BE GROUTED IF UNDER BUILDING.
- ELECTRICAL, TELEPHONE, CABLE, WATER, FIBER OPTIC CABLE AND/OR GAS LINES NEEDING TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE AFFECTED UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY IS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE. CONTRACTOR SHALL PAY CLOSE ATTENTION TO EXISTING UTILITIES WITHIN THE ROAD RIGHT-OF-WAY DURING CONSTRUCTION.
- THE CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.
- ANY EXISTING UTILITIES TO BE REMOVED ARE TO BE DISCONNECTED PRIOR TO THE START OF DEMOLITION. FURTHER, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH ALL UTILITY COMPANIES PRIOR TO DISCONNECTING AND DEMOLITION OF SAID UTILITIES.
- DEMOLITION CONTRACTOR SHALL COORDINATE DECOMMISSIONING AND REMOVAL OF UTILITY LINES WITH UTILITY CONTRACTOR AS TO LOCATION AND CONDITION OF CAPPING. THE ACCESS SHALL REMAIN OPEN AND OPERATIONAL AT ALL TIMES.
- THE CONTRACTOR SHALL MAINTAIN UNINTERRUPTED UTILITY SERVICE TO THE SURROUNDING PROPERTIES AND EXISTING SHOPPING CENTER TENANTS AT ALL TIMES.
- ALL EXISTING UNDERGROUND UTILITIES THAT WILL NOT BE MAINTAINED IN SERVICE SHOULD EITHER BE REMOVED AND REPLACED WITH APPROVED COMPACTED FILL, OR BE ABANDONED IN PLACE BY FILLING WITH GROUT AND CAPPING, PROVIDED THAT THEY DO NOT INTERFERE WITH ANY OF THE PROPOSED CONSTRUCTION.
- CONTRACTOR MAY LIMIT SAW-CUT & PAVEMENT REMOVAL TO ONLY THOSE AREAS WHERE IT IS REQUIRED AS SHOWN ON THESE CONSTRUCTION PLANS BUT IF ANY DAMAGE IS INCURRED ON ANY OF THE SURROUNDING PAVEMENT, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS REMOVAL AND REPAIR.

**GENERAL SITE NOTES:**

- THE CONTRACTOR SHALL FURNISH, INSTALL, TEST AND COMPLETE ALL WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION; AS SUCH, THESE PLANS DO NOT COMPLETELY REPRESENT, NOR ARE THEY INTENDED TO REPRESENT, ALL SPECIFIC INSTRUCTIONS REQUIRED FOR SITEWORK CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO CONSTRUCT ALL IMPROVEMENTS DEPICTED ON THESE PLANS IN ACCORDANCE WITH ALL APPLICABLE RULES, REGULATIONS AND LAWS IN EFFECT AT THE TIME OF CONSTRUCTION.
- THE CONTRACTOR SHALL ACCEPT THE SITE AS IS. THE CONTRACTOR SHALL ASSESS CONDITIONS, AND THE KIND, QUALITY AND QUANTITY OF WORK REQUIRED. THE OWNER AND ENGINEER MAKE NO GUARANTEE IN REGARD TO THE ACCURACY OF ANY INFORMATION THAT WAS OBTAINED DURING INVESTIGATIONS. THE CONTRACTOR SHALL MAKE A THOROUGH SITE INSPECTION IN ORDER TO FIELD CHECK EXISTING SITE CONDITIONS. CORRELATE CONDITIONS WITH THE DRAWINGS, AND, RESOLVE ANY POSSIBLE CONSTRUCTION CONFLICTS WITH THE OWNER AND ENGINEER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL PERFORM ADDITIONAL TOPOGRAPHIC SURVEYS IF/WHEN NECESSARY, PROVIDED THEY ARE COORDINATED WITH THE OWNER. ANY CONDITIONS DETERMINED BY THE CONTRACTOR THAT DIFFER FROM THE INFORMATION SHOWN ON THE DRAWINGS THAT ARE NOT BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO THE START OF WORK SHALL NOT BE CONSIDERED GROUNDS FOR ADDITIONAL PAYMENT OR CHANGES TO THE CONTRACT DURATION, OR ANY OTHER CLAIMS AGAINST THE OWNER OR OWNER'S ENGINEER.
- THE CONTRACTOR SHALL, WHEN HE/SHE DEEMS NECESSARY, PROVIDE A WRITTEN REQUEST FOR INFORMATION (RFI) TO THE OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE, AND ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITEWORK ITEM. THE RFI SHALL BE IN A FORM ACCEPTABLE TO OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE, AND ENGINEER AND SHALL ALLOW FOR A MINIMUM OF THREE WORK DAYS FOR A WRITTEN REPLY. RFIS SHALL BE NUMBERED CONSECUTIVELY BY DATE SUBMITTED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITEWORK ITEMS CONSTRUCTED DIFFERENTLY THAN INTENDED OR AS DEPICTED ON THE PLANS.
- INFORMATION RELATED TO ELEVATIONS AND PROPOSED UTILITIES (SUCH AS ROADWAY GRADES, INVERT ELEVATIONS, RIM ELEVATIONS, GRATE ELEVATIONS, BUILDING FINISHED FLOOR ELEVATIONS, ETC.) MAY BE FOUND IN MORE THAN ONE LOCATION IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL THOROUGHLY REVIEW ALL PLANS, PROFILES AND ANY OTHER INFORMATION IN THE CONTRACT DOCUMENTS FOR CONSISTENCY PRIOR TO BID. ANY INCONSISTENCIES OR DISCREPANCIES THAT ARE FOUND BY THE CONTRACTOR OR HIS AGENTS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER IN WRITING, IN THE FORMAT OF AN RFI PRIOR TO BID.
- THERE ARE ADDITIONAL NOTES, SPECIFICATIONS AND REQUIREMENTS CONTAINED THROUGHOUT THE PLAN SET AS WELL AS REFERENCES TO SPECIFICATIONS FROM APPLICABLE GOVERNING AUTHORITIES AND INDUSTRY STANDARDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN, REVIEW AND ADHERE TO ALL THESE DOCUMENTS.
- CONTRACTOR IS SPECIFICALLY CAUTIONED THAT ALL CONSTRUCTION STAKEOUT FOR THIS PROJECT MUST BE COMPLETED FROM THE SITE SPECIFIC SURVEY CONTROL (HORIZONTAL AND VERTICAL) UPON WHICH THE DESIGN IS BASED. THE CONTRACTOR SHOULD NOT RELY ON OR RE-ESTABLISH SURVEY CONTROL BY GPS OR OTHER METHODS FOR USE IN CONSTRUCTION STAKEOUT OR ANY OTHER PURPOSE FOR THIS PROJECT. ANY DISCREPANCIES BETWEEN THE EXISTING HORIZONTAL OR VERTICAL DATA SHOWN ON THESE DRAWINGS AND THAT ENCOUNTERED IN THE FIELD MUST BE REPORTED TO THE DESIGN TEAM PRIOR TO CONSTRUCTION FOR RESOLUTION.

UTILITY SERVICES FOR THE EXISTING SHOPPING CENTER AND ITS TENANTS SHALL REMAIN OPERATIONAL DURING UTILITY DEMOLITION.

ALL STRUCTURES SHOWN WITH AN "X" AND AS FURTHER LABELED ON THE PLAN SHALL BE REMOVED. ALL OTHER STRUCTURES, FEATURES ARE TO REMAIN UNLESS OTHERWISE NOTED.

DUE TO UNKNOWN FIELD CONDITIONS, THIS PLAN SHOULD NOT BE CONSIDERED ALL INCLUSIVE AS ADDITIONAL ITEMS MAY BE FOUND THAT SHALL BE DEMOLISHED.

ALL EXISTING UTILITIES TO BE REMOVED ARE TO BE DISCONNECTED PRIOR TO THE START OF DEMOLITION. FURTHER, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH ALL UTILITY COMPANIES PRIOR TO DISCONNECTING AND DEMOLITION OF SAID UTILITIES.

EXISTING UTILITIES THAT ARE TO REMAIN IN AREAS OF REGRADING OR OTHER IMPROVEMENTS SHOULD BE ADJUSTED TO BE FLUSH WITH PROPOSED SURFACE EITHER WITHIN PAVEMENT OR LAWN AREA

THE CONTRACTOR SHALL REMOVE FROM THE SITE ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM DEMOLITION AND SHALL SAFELY AND LEGALLY DISPOSE OF ALL THESE ITEMS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND REGULATORY AUTHORITY HAVING JURISDICTION. ALL RECYCLING MUST BE DONE IN ACCORDANCE WITH APPLICABLE REGULATIONS. BURNING OF ANY DEMOLISHED MATERIALS ON-SITE SHALL NOT BE PERMITTED. ANY RECYCLING OF DEMOLITION DEBRIS SHALL BE APPROVED BY THE OWNER.

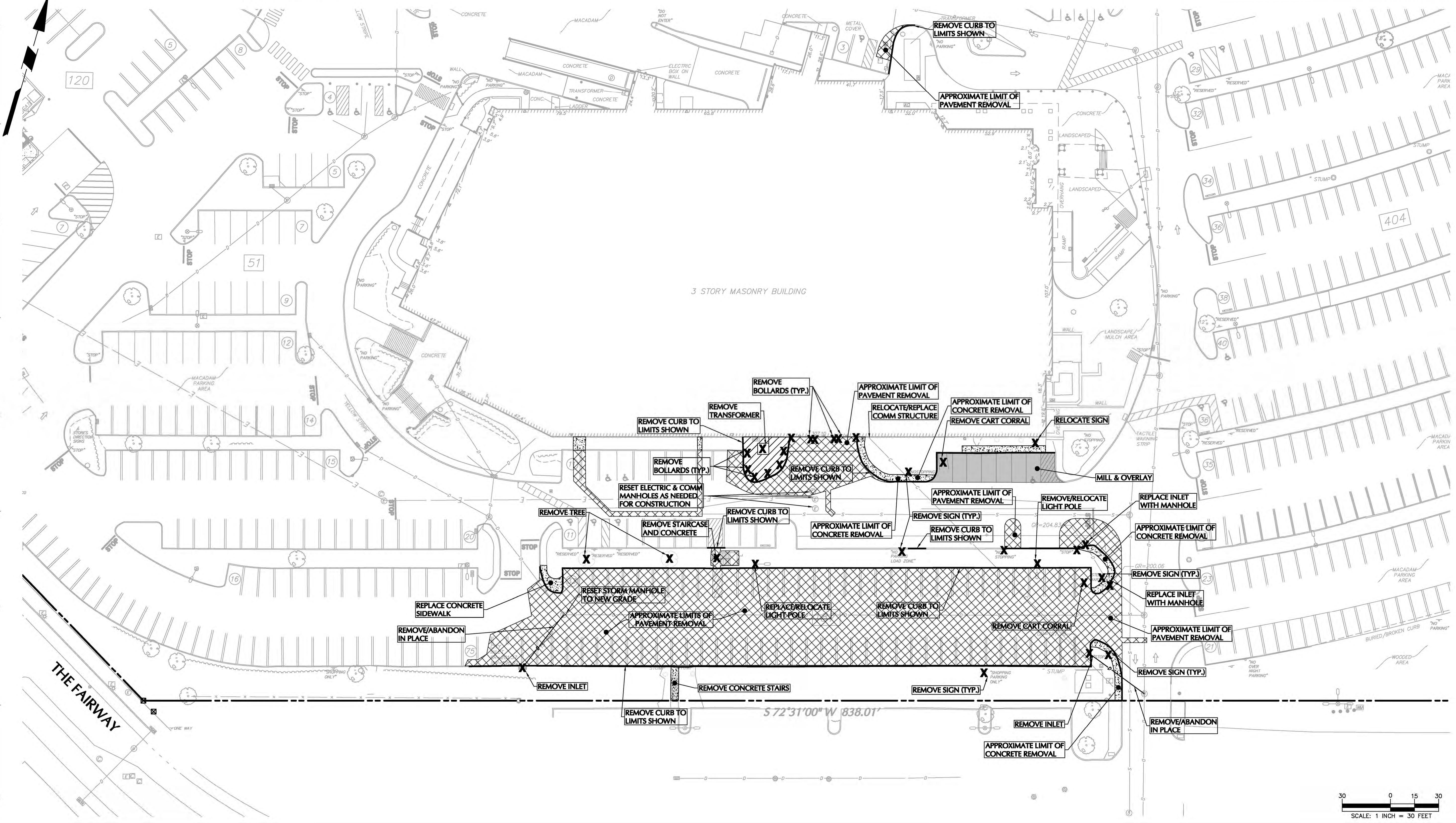
ALL EXISTING UNDERGROUND UTILITIES THAT WILL NOT BE MAINTAINED IN SERVICE SHOULD EITHER BE REMOVED AND REPLACED WITH APPROVED COMPACTED FILL, OR BE ABANDONED IN PLACE BY FILLING WITH GROUT AND CAPPING, PROVIDED THAT THEY DO NOT INTERFERE WITH ANY OF THE PROPOSED CONSTRUCTION.

IN AREAS OF EXCAVATION, ALL EXISTING UTILITIES TO REMAIN SHALL BE CHECKED FOR PROPER COVER BY THE CONTRACTOR AS REQUIRED BY THE UTILITY OWNER. SHOULD MINIMUM COVER NOT EXIST, THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH SAID UTILITY COMPANY TO LOWER THE UTILITY TO PROVIDE PROPER COVER.

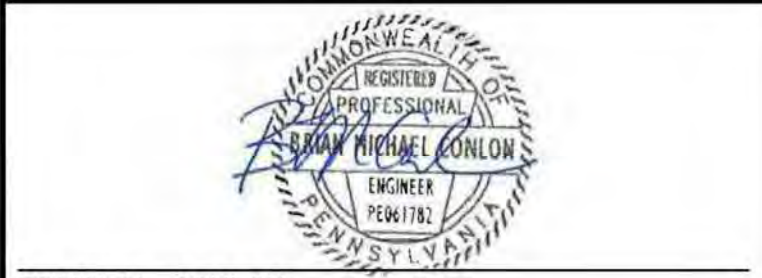
ALL EXISTING BITUMINOUS AND CONCRETE PAVEMENT MUST BE REMOVED COMPLETELY THROUGHOUT THE SITE TO PERMIT PROPER GRADING AND FILL PLACEMENT AS WELL AS FACILITATE BUILDING CONSTRUCTION AND UTILITY INSTALLATIONS. THE REUSE OF EXISTING PAVEMENT / SLAB MATERIALS AFTER PROCESSING SHOULD BE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS AND ENVIRONMENTAL STATUTES AND AT THE DIRECTION OF THE OWNER AND GEOTECHNICAL ENGINEER.

**LEGEND**

	REMOVE STORM
	REMOVE CURB
	REMOVE EXISTING FEATURE
	REMOVE PAVEMENT
	REMOVE CONCRETE
	MILL & OVERLAY



Date	Description	No.
Revisions		



BRIAN M. CONLON  
PROFESSIONAL ENGINEER  
PA Lic. No. PE061782

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Project  
**NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS**  
ABINGTON TOWNSHIP  
MONTGOMERY COUNTY PENNSYLVANIA  
Drawing Title

**SITE DEMOLITION PLAN**

Project No. 220154401	<b>CD-101</b>
Date 12 AUGUST 2025	
Drawn By TFH/AEB	
Checked By BMC	
Sheet 4 of 18	

Project No. 220154401

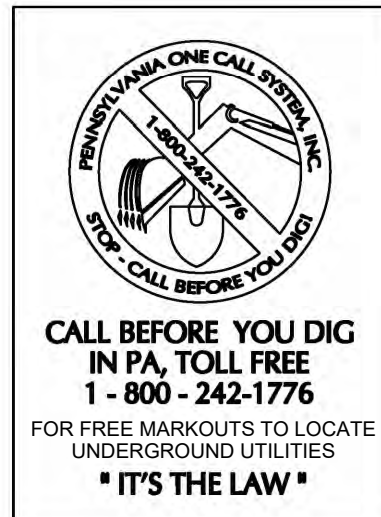
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**SITE CONSTRUCTION NOTES:**

1. SITE ADDRESS:  
901 OLD YORK ROAD  
JENKINTOWN, PA 19046
2. APPLICANT/OWNER:  
PARAMOUNT 300 AT JENKINTOWN, LLC  
PARAMOUNT REALTY  
1195 ROUTE 70, SUITE 2000  
LANCROSS, PA 19040  
PHONE: (732) 886-1500
3. THE OVERALL PROPERTY CONSISTS OF APPROXIMATELY 17,927 ACRES LOCATED IN ABBINGTON TOWNSHIP, MONTGOMERY COUNTY.
4. ALL DRAWINGS IN THIS PLAN SET ARE MADE PART OF THIS RECORD PLAN AND ALL INFORMATION SHOWN HEREON SHALL BE CONSIDERED APPLICABLE FOR THE COMPLETION OF THIS PROJECT. INDIVIDUAL PLANS SHALL NOT BE USED SINCE THEY CONSTITUTE ONLY A PART OF THE COMPLETE SET OF PLANS FOR THIS PROJECT.
5. THIS APPLICATION PROPOSES THE RE-TENANTING OF THE LOWER LEVEL OF NOBLE TOWN CENTER A 10,927 SF RETAIL BUILDING WITH 4 TENANT SPACES ALONG WITH THE SUPPORTING INFRASTRUCTURE INCLUDING PARKING, DRIVE AISLES, AND UTILITIES.
6. THIS SITE PLAN IS BASED UPON EXISTING PHYSICAL CONDITIONS AT THE SUBJECT SITE DURING A FIELD SURVEY BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES AND THE FOLLOWING REFERENCE PLAN:  
A. SHEET VT-101, BOUNDARY AND TOPOGRAPHIC SURVEY, DATED 10/24/22, PREPARED BY LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS INCLUDING, BUT NOT LIMITED TO, SIDEWALK/STREET CLOSING AND REDUCTION.
8. ALL TOWNSHIP, COUNTY AND STATE OCCUPANCY PERMITS SHALL BE OBTAINED FOR CONSTRUCTION AND IMPROVEMENTS WITHIN TOWNSHIP, COUNTY AND STATE ROADS.
9. THE CONTRACTOR SHALL REVIEW AND COMPLY WITH ALL APPLICABLE PROVISIONS, STANDARDS AND SPECIFICATIONS, CONSTRUCTION REQUIREMENTS AND MATERIAL SPECIFICATIONS SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND DETAILS OF UPPER MERIDIAN TOWNSHIP, MONTGOMERY COUNTY, PADEP, PENNDOT, AND OSHA WHERE APPLICABLE.
10. ALL DIMENSIONS SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, INCLUDING BUT NOT LIMITED TO STRUCTURES, UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS, POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COSTS SHALL BE INCLUDED IN BASE BID.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING THE DAMAGE DONE TO ANY EXISTING ITEM DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO STRUCTURES, UTILITIES, STORM DRAINAGE, PAVEMENT, STRIPPING, CURBS, ETC. REPAIRS SHALL BE EQUAL TO OR BETTER THAN EXISTING CONDITIONS. THE CONTRACTOR IS RESPONSIBLE TO DOCUMENT ALL EXISTING DAMAGE AND NOTIFY THE CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION START.
13. THE CONTRACTOR SHALL FOLLOW ALL LOCAL, STATE AND FEDERAL REGULATIONS IN DISPOSING OF EQUALIZED MATERIALS REMOVED FROM THE SITE.
14. THE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF CANOPIES, EXT. DOORS, RAMP, TRUCK DOCKS, PRECISE BUILDING DIMENSIONS, CONCRETE PADS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.
15. TOPSOIL IS TO BE RE-SPREAD OVER ALL LANDSCAPED AND LAWN AREAS TO A UNIFORM MINIMUM DEPTH OF 6 INCHES.
16. ALL PAVEMENT MARKINGS SHALL CONFORM TO THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (LATEST EDITION) FROM THE U.S. DEPARTMENT OF TRANSPORTATION.
17. ALL DIMENSIONS AND RADI ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED AND INDICATED.
18. BASED ON FEMA FLOOD INSURANCE RATE MAP (FIRM), COMMUNITY PANEL NO. 42010C0410, EFFECTIVE DATE MARCH 2, 2016, FOR MONTGOMERY COUNTY.
19. THE CONTRACTOR IS TO NOTIFY THE TOWNSHIP AND TOWNSHIP ENGINEER 48 HOURS PRIOR TO THE START OF CONSTRUCTION.

**GENERAL SITE NOTES:**

1. THE CONTRACTOR SHALL FURNISH, INSTALL, TEST AND COMPLETE ALL WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION AS SUCH. THESE PLANS DO NOT COMPLETELY REPRESENT, NOR ARE THEY INTENDED TO REPRESENT, ALL SPECIFIC INSTRUCTIONS REQUIRED FOR SITEWORK CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO CONSTRUCT ALL IMPROVEMENTS DEPICTED ON THESE PLANS IN ACCORDANCE WITH ALL APPLICABLE RULES, REGULATIONS AND LAWS IN EFFECT AT THE TIME OF CONSTRUCTION.
2. THE CONTRACTOR SHALL ACCEPT THE SITE AS IS. THE CONTRACTOR SHALL ASSESS CONDITIONS, AND THE KIND, QUALITY AND QUANTITY OF WORK REQUIRED. THE OWNER AND ENGINEER MAKE NO GUARANTEE IN REGARD TO THE ACCURACY OF ANY INFORMATION THAT WAS OBTAINED DURING INVESTIGATIONS. THE CONTRACTOR SHALL MAKE A THOROUGH SITE INSPECTION IN ORDER TO FIELD CHECK EXISTING SITE CONDITIONS, CORRELATE CONDITIONS WITH THE DRAWINGS, AND RESOLVE ANY POSSIBLE CONSTRUCTION CONFLICTS WITH THE OWNER AND ENGINEER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL PERFORM ADDITIONAL TOPOGRAPHIC SURVEYS HE/SHE DEEMS NECESSARY, PROVIDED THEY ARE COORDINATED WITH THE OWNER. ANY CONDITIONS DETERMINED BY THE CONTRACTOR THAT DIFFER FROM THE INFORMATION SHOWN ON THE DRAWINGS THAT ARE NOT BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO THE START OF WORK SHALL NOT BE CONSIDERED GROUNDS FOR ADDITIONAL PAYMENT OR CHANGES TO THE CONTRACT DURATION, OR ANY OTHER CLAIMS AGAINST THE OWNER OR OWNER'S ENGINEER.
3. THE CONTRACTOR SHALL, WHEN HE/SHE DEEMS NECESSARY, PROVIDE A WRITTEN REQUEST FOR INFORMATION (RFI) TO THE OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE, AND ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITEWORK ITEM. THE (RFI) SHALL BE IN A FORM ACCEPTABLE TO OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE, AND ENGINEER AND SHALL ALLOW FOR A MINIMUM OF THREE WORK DAYS FOR A WRITTEN REPLY. RFIS SHALL BE NUMBERED CONSECUTIVELY BY DATE SUBMITTED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITEWORK ITEMS CONSTRUCTED DIFFERENTLY THAN INTENDED OR AS DEPICTED ON THE PLANS.
4. INFORMATION RELATED TO ELEVATIONS AND PROPOSED UTILITIES (SUCH AS ROADWAY GRADES, INVERT ELEVATIONS, FIN ELEVATIONS, GRADE ELEVATIONS, BUILDING FINISHED FLOOR ELEVATIONS, ETC.) MAY BE FOUND IN MORE THAN ONE LOCATION IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL SUFFICIENTLY REVIEW ALL PLANS, PROFILES AND ANY OTHER INFORMATION IN THE CONTRACT DOCUMENTS FOR CONSISTENCY PRIOR TO BID. ANY INCONSISTENCIES OR DISCREPANCIES THAT ARE FOUND BY THE CONTRACTOR OR HIS ASSIGNS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER IN WRITING, IN THE FORMAT OF AN RFI PRIOR TO BID.
5. THERE ARE ADDITIONAL NOTES, SPECIFICATIONS AND REQUIREMENTS CONTAINED THROUGHOUT THE PLAN SET AS WELL AS REFERENCES TO SPECIFICATIONS FROM APPLICABLE GOVERNING AUTHORITIES AND INDUSTRY STANDARDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN, REVIEW AND ADHERE TO ALL THESE DOCUMENTS.
6. CONTRACTOR IS SPECIFICALLY CAUTIONED THAT ALL CONSTRUCTION STAKEOUT FOR THIS PROJECT MUST BE COMPLETED FROM THE SITE SPECIFIC SURVEY CONTROL (HORIZONTAL AND VERTICAL) UPON WHICH THE DESIGN IS BASED. THE CONTRACTOR SHOULD NOT RELY ON OR RE-ESTABLISH SURVEY CONTROL BY GPS OR OTHER METHODS FOR USE IN CONSTRUCTION STAKEOUT OR ANY OTHER PURPOSE FOR THIS PROJECT. ANY DISCREPANCIES BETWEEN THE EXISTING HORIZONTAL OR VERTICAL DATA SHOWN ON THESE DRAWINGS AND THAT ENCOUNTERED IN THE FIELD MUST BE REPORTED TO THE DESIGN TEAM PRIOR TO CONSTRUCTION FOR RESOLUTION.



**LEGEND**

---	PROPERTY LINE
---	SETBACK LINE
---	BUILD-TO LINE
---	BUILD-TO ZONE
---	CURB
---	BUILDING LINE
---	PARKING SUBTOTAL
---	PARKING COUNT
---	DOORWAY
---	CONCRETE SIDEWALK

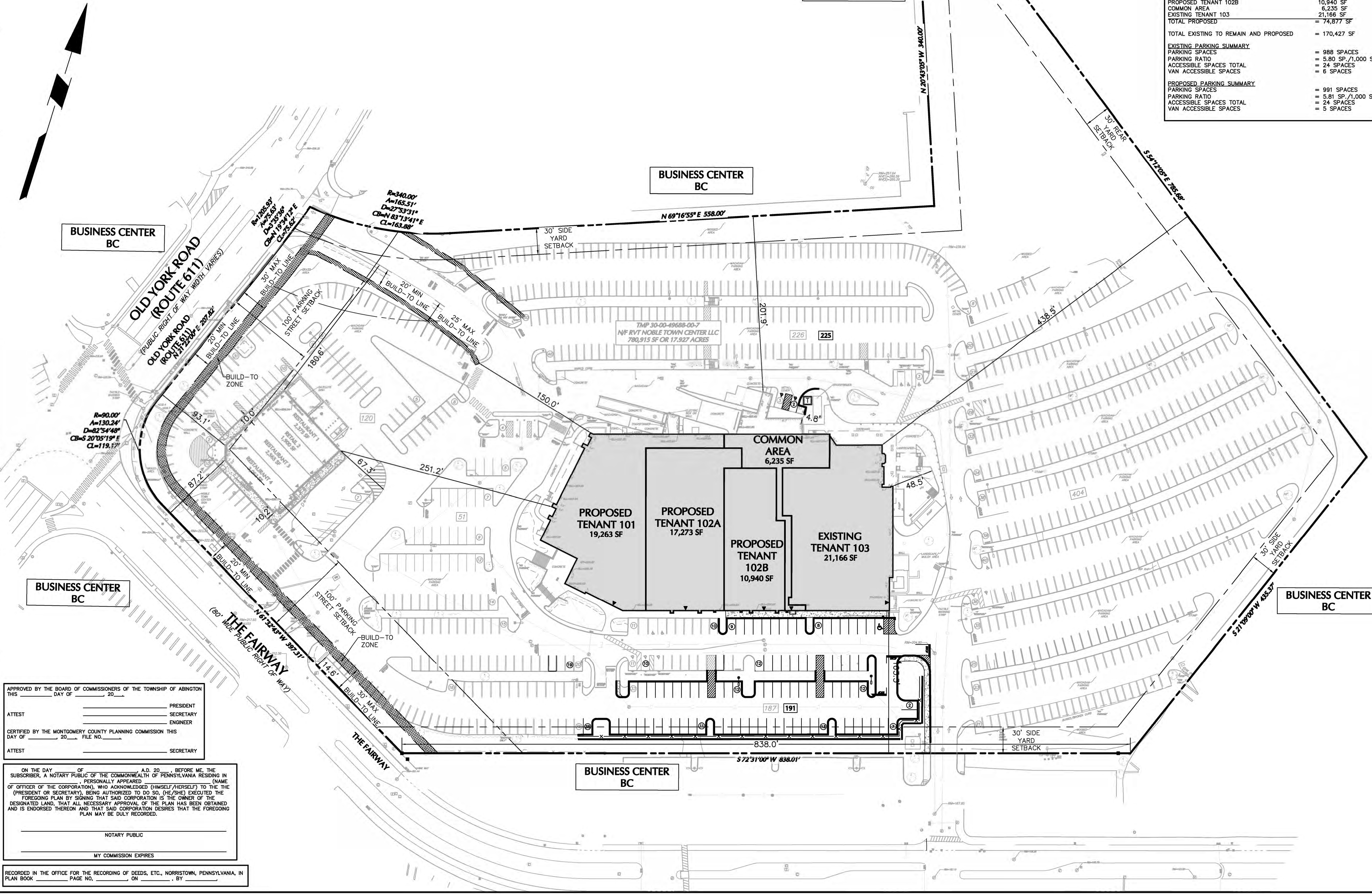
**OVERALL SUMMARY**

GROSS FLOOR AREA SUMMARY	
EXISTING BUILDINGS	
NOBLE TOWN CENTER	74,877 SF
LOWER LEVEL	63,710 SF
UPPER LEVEL	21,938 SF
RESTAURANT 1	2,375 SF
RESTAURANT 2	1,900 SF
RESTAURANT 3	2,565 SF
RESTAURANT 4	3,062 SF
TOTAL EXISTING BUILDING	170,427 SF
PROPOSED BUILDINGS REPLACING TENANTS OF NOBLE TOWN CENTER	
PROPOSED TENANT 101	19,263 SF
PROPOSED TENANT 102A	17,273 SF
PROPOSED TENANT 102B	10,940 SF
COMMON AREA	6,235 SF
EXISTING TENANT 103	21,166 SF
TOTAL PROPOSED	74,877 SF
TOTAL EXISTING TO REMAIN AND PROPOSED	= 170,427 SF
EXISTING PARKING SUMMARY	
PARKING SPACES	= 986 SPACES
PARKING RATIO	= 5.80 SP/1,000 SF
ACCESSIBLE SPACES TOTAL	= 24 SPACES
VAN ACCESSIBLE SPACES	= 6 SPACES
PROPOSED PARKING SUMMARY	
PARKING SPACES	= 991 SPACES
PARKING RATIO	= 5.81 SP/1,000 SF
ACCESSIBLE SPACES TOTAL	= 24 SPACES
VAN ACCESSIBLE SPACES	= 5 SPACES

**NOBLE TOWN CENTER**  
TOWNSHIP OF ABBINGTON, MONTGOMERY COUNTY, PENNSYLVANIA  
ZONING AND LAND DEVELOPMENT REGULATIONS  
ZONING SUMMARY - PARCEL 30-00-49688-00-7

APPLICABLE REGULATIONS	PERMITTED/REQUIRED	EXISTING	PROPOSED
ZONING DISTRICT DESIGNATION: BUSINESS CENTER (BC) - NOBLE			
SCHEDULE OF USE REGULATIONS			
PERMITTED USES:	MIXED USE, RETAIL, RESTAURANTS, OFFICE, SHOPPING CENTER	SHOPPING CENTER, RETAIL	SHOPPING CENTER, RETAIL, RESTAURANT
AREA AND BULK REGULATIONS			
MINIMUM MIXING REQUIREMENT FOR LOTS > 1 ACRE	20%-80% RESIDENTIAL	100% COMMERCIAL	100% COMMERCIAL
MINIMUM LOT SIZE:	1 ACRE	17,927 ACRES	17,927 ACRES
MINIMUM LOT WIDTH:	100 FEET	289.0 FEET	289.0 FEET
MINIMUM LOT DEPTH:	150 FEET	837.2 FEET	837.2 FEET
MINIMUM IMPERVIOUS COVERAGE:	70.44%	70.44%	70.33%
MAXIMUM PAVING:	75%	59.42%	59.32%
MAXIMUM EXPANSION OF NONCONFORMING SITE BEFORE CONDITIONS OF BC DISTRICT MUST BE MET:	15%	-	0%
MINIMUM GREEN AREA:	25%	29.56%	29.06%
MINIMUM PUBLIC OPEN SPACE:	5% GROSS FLOOR AREA (5' X 170.427' = 8.521 SF)	0	0
BUILD TO LINE (BTL) REQUIREMENTS:			
BTL FOR PUBLIC STREETS:	MINIMUM 20 FEET	87.2 FEET	87.2 FEET (A)
BTL FOR MAIN ACCESS DRIVES/PRIVATE STREETS:	MINIMUM 20 FEET	REST./RETAIL PAD - 180.6 FT NTC - 150.0 FT	REST./RETAIL PAD - 180.6 FT NTC - 150.0 FT (A)
BTL FOR SECONDARY ACCESS DRIVES:	MINIMUM 25 FEET	REST./RETAIL PAD - 37.3 FT NTC - 48.5 FT	REST./RETAIL PAD - 37.3 FT NTC - 48.5 FT (A)
% OF NEW FLOOR AREA IN BUILDINGS EXTENDING INTO BUILD-TO ZONE OR PRIORITY STREET FRONTS (OLD YORK ROAD AND FAIRWAY)	2 PRIORITY STREET FRONTS	0%	0%
SETBACK REGULATIONS:			
MINIMUM SIDE AND REAR YARD (RESIDENTIAL DISTRICT):	50 FEET	N/A	N/A
MINIMUM SIDE AND REAR YARD (OTHER DISTRICTS):	30 FEET	163.3 FEET (SIDE) 438.5 FEET (REAR)	163.3 FEET (SIDE) 438.5 FEET (REAR)
MINIMUM BUILDING SETBACK FROM PARKING:	10 FEET	4.8 FEET	8.8 FEET (A)
MINIMUM DISTANCE BETWEEN ON-SITE BUILDINGS:	20 FEET (BUILDING < 40 FT TALL) 40 FEET	251.2 FEET	251.2 FEET
MINIMUM SEPARATION DISTANCE FROM STREET ACCESS POINTS:	200 FEET	550.1 FEET	550.1 FEET
MAXIMUM BUILDING HEIGHT:	4: 2 IF MORE THAN 300 FEET OF FRONTAGE (811 FEET OF FRONTAGE) 25 FEET PITCHED 35 FEET (100 FT FROM OLD YORK ROAD OR FAIRWAY) 300 FEET	2 - EXTERNAL STREET 1 - ADJOINING PROPERTY	2 - EXTERNAL STREET 1 - ADJOINING PROPERTY
MAXIMUM BUILDING LENGTH:	100 FEET	REST./RETAIL PAD - 20.37 FT NTC - 56.76 FT	REST./RETAIL PAD - 20.37 FT NTC - 56.76 FT (A)
MAXIMUM BUILDING SIZE:	150,000 SF	86,079 SF	86,079 SF (A)
MAXIMUM BUILDING COVERAGE:	40%	11.02%	11.02%
PARKING REQUIREMENTS			
MINIMUM PARKING TALL DIMENSIONS:	10 FEET X 20 FEET	10 FEET X 18 FEET	10 FEET X 18 FEET (A)
MINIMUM PARKING TWO-WAY DRIVE AISLE WIDTH (90° STALLS)	24 FEET	24 FEET	24 FEET
MINIMUM PARKING ONE-WAY DRIVE AISLE WIDTH (90° STALLS)	12 FEET	12 FEET	12 FEET
MINIMUM REQUIRED OFF-STREET PARKING SPACES:	1 SP/250 SF GROSS LEASABLE FLOOR AREA (723 SPACES)	1 SP/172 SF GROSS LEASABLE FLOOR AREA (988 SPACES)	1 SP/172 SF GROSS LEASABLE FLOOR AREA (991 SPACES)
MINIMUM NUMBER OF ADA ACCESSIBLE PARKING SPACES:	2% OF 901/1000 PARKING SPACES (18 SPACES) VAN SPACE 1/6 = 5	19 REGULAR ADA SPACES 5 VAN SPACES 24 SPACES TOTAL	19 REGULAR ADA SPACES 5 VAN SPACES 24 SPACES TOTAL

NOTES:  
(A) PRE-EXISTING NON-CONFORMING CONDITION



APPROVED BY THE BOARD OF COMMISSIONERS OF THE TOWNSHIP OF ABBINGTON THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ 20\_\_\_\_.

ATTEST: \_\_\_\_\_ PRESIDENT  
 \_\_\_\_\_ SECRETARY  
 \_\_\_\_\_ ENGINEER

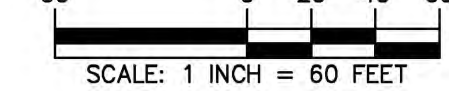
CERTIFIED BY THE MONTGOMERY COUNTY PLANNING COMMISSION THIS DAY OF \_\_\_\_\_ 20\_\_\_\_. FILE NO. \_\_\_\_\_

ATTEST: \_\_\_\_\_ SECRETARY

ON THE DAY OF \_\_\_\_\_ A.D. 20\_\_\_\_ BEFORE ME, THE SUBSCRIBER, A NOTARY PUBLIC OF THE COMMONWEALTH OF PENNSYLVANIA RESIDING IN \_\_\_\_\_ PERSONALLY APPEARED \_\_\_\_\_ (NAME OF OFFICER OF THE CORPORATION), WHO ACKNOWLEDGED (HIMSELF/HERSELF) TO BE THE (PRESIDENT OR SECRETARY), BEING AUTHORIZED TO DO SO, (HE/SHE) EXECUTED THE FOREGOING PLAN BY SIGNING THAT SAID CORPORATION IS THE OWNER OF THE DESIGNATED LAND, THAT ALL NECESSARY APPROVAL OF THE PLAN HAS BEEN OBTAINED AND IS ENDORSED THEREON AND THAT SAID CORPORATION DESIRES THAT THE FOREGOING PLAN MAY BE DULY RECORDED.

NOTARY PUBLIC  
 MY COMMISSION EXPIRES \_\_\_\_\_

RECORDED IN THE OFFICE FOR THE RECORDING OF DEEDS, ETC., NORRISTOWN, PENNSYLVANIA, IN PAGE NO. \_\_\_\_\_ ON \_\_\_\_\_ BY \_\_\_\_\_



Date	Description	No.
Revisions		

BRIAN M. CONLON  
PROFESSIONAL ENGINEER  
PA Lic. No. PE061782

**LANGAN**  
Langan Engineering and Environmental Services, Inc.  
1818 Market Street, Suite 3300  
Philadelphia, PA 19103  
T: 215.845.8900 F: 215.845.8901 www.langan.com

Project  
**NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS**  
ABBINGTON TOWNSHIP  
MONTGOMERY COUNTY PENNSYLVANIA  
Drawing Title

**OVERALL SITE PLAN**

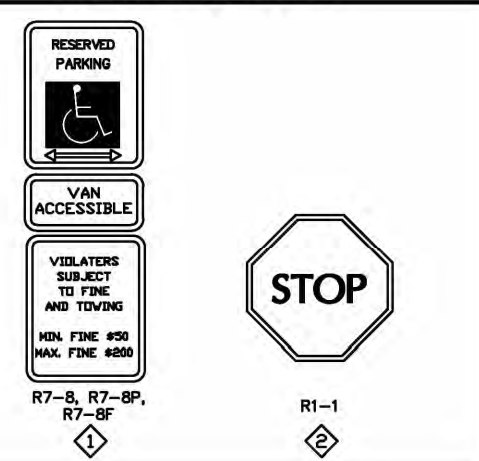
Project No. 220154401  
Date 12 AUGUST 2025  
Drawn By TFH/AEB  
Checked By BMC

CS-100  
Sheet 5 of 18

**GENERAL SITE NOTES:**

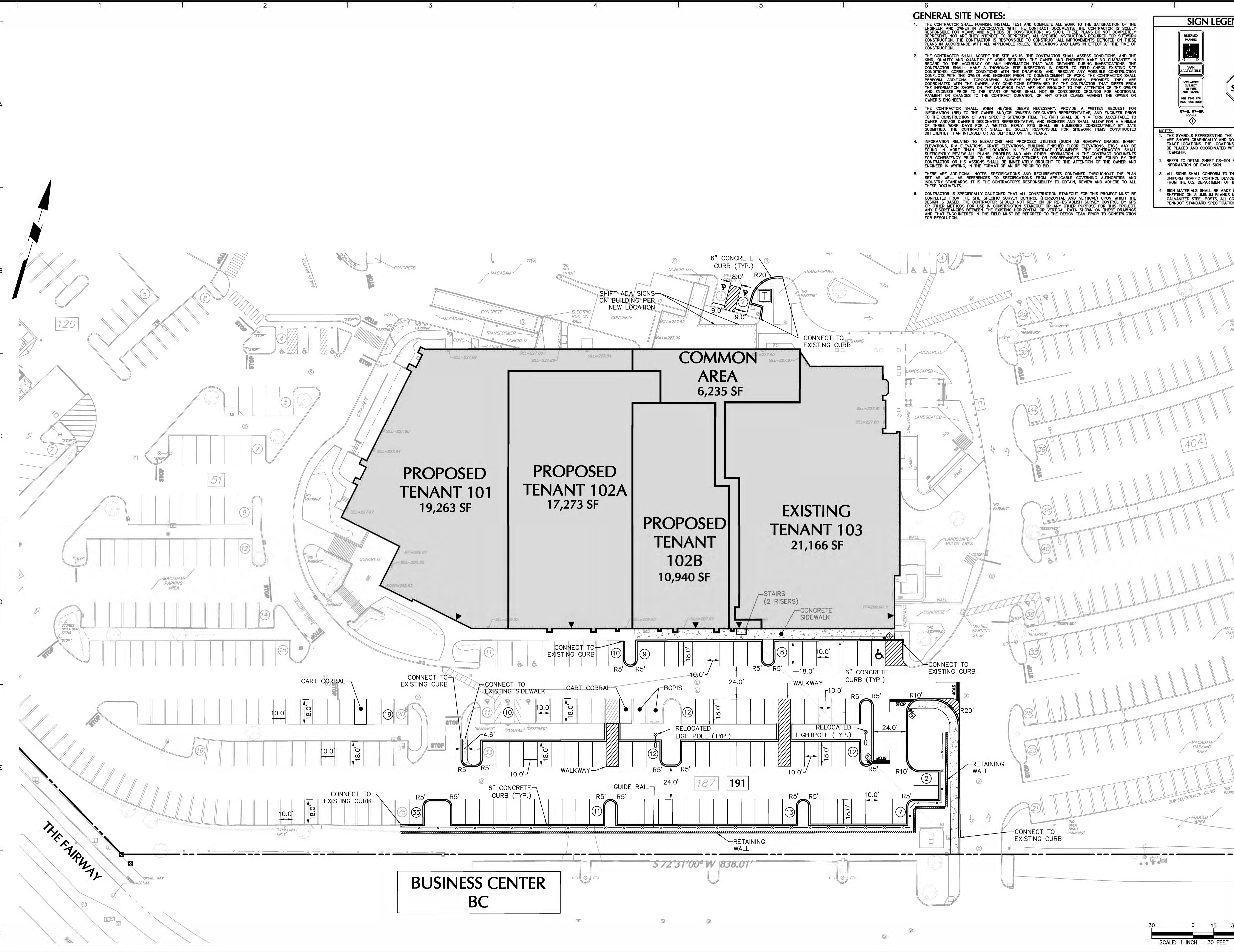
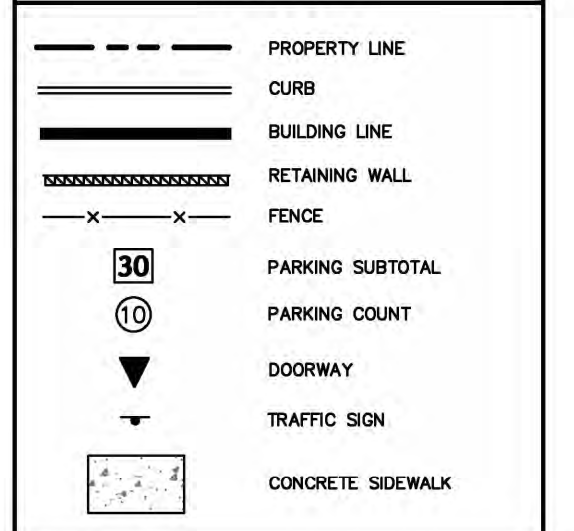
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**SIGN LEGEND**



- NOTES:**
1. THE SYMBOLS REPRESENTING THE PROPOSED SIGNS (4) ARE SHOWN GRAPHICALLY AND DO NOT REPRESENT EXACT LOCATIONS. THE LOCATIONS OF THE SIGNS SHALL BE PLACED AND COORDINATED WITH DOWLESTOWN TOWNSHIP.
  2. REFER TO DETAIL SHEET CS-501 FOR DETAILED INFORMATION OF EACH SIGN.
  3. ALL SIGNS SHALL CONFORM TO THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (LATEST EDITION) FROM THE U.S. DEPARTMENT OF TRANSPORTATION.
  4. SIGN MATERIALS SHALL BE MADE OF REFLECTIVE SHEETING ON ALUMINUM BLANKS MOUNTED ON GALVANIZED STEEL POSTS, ALL CONFORMING TO PENNDOT STANDARD SPECIFICATIONS.

**LEGEND**



Date	Description	No.
Revisions		



**BRIAN M. CONLON**  
PROFESSIONAL ENGINEER  
PA Lic. No. PE061782

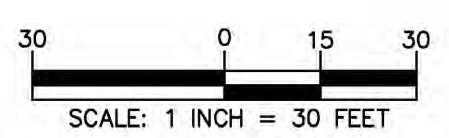
**LANGAN**  
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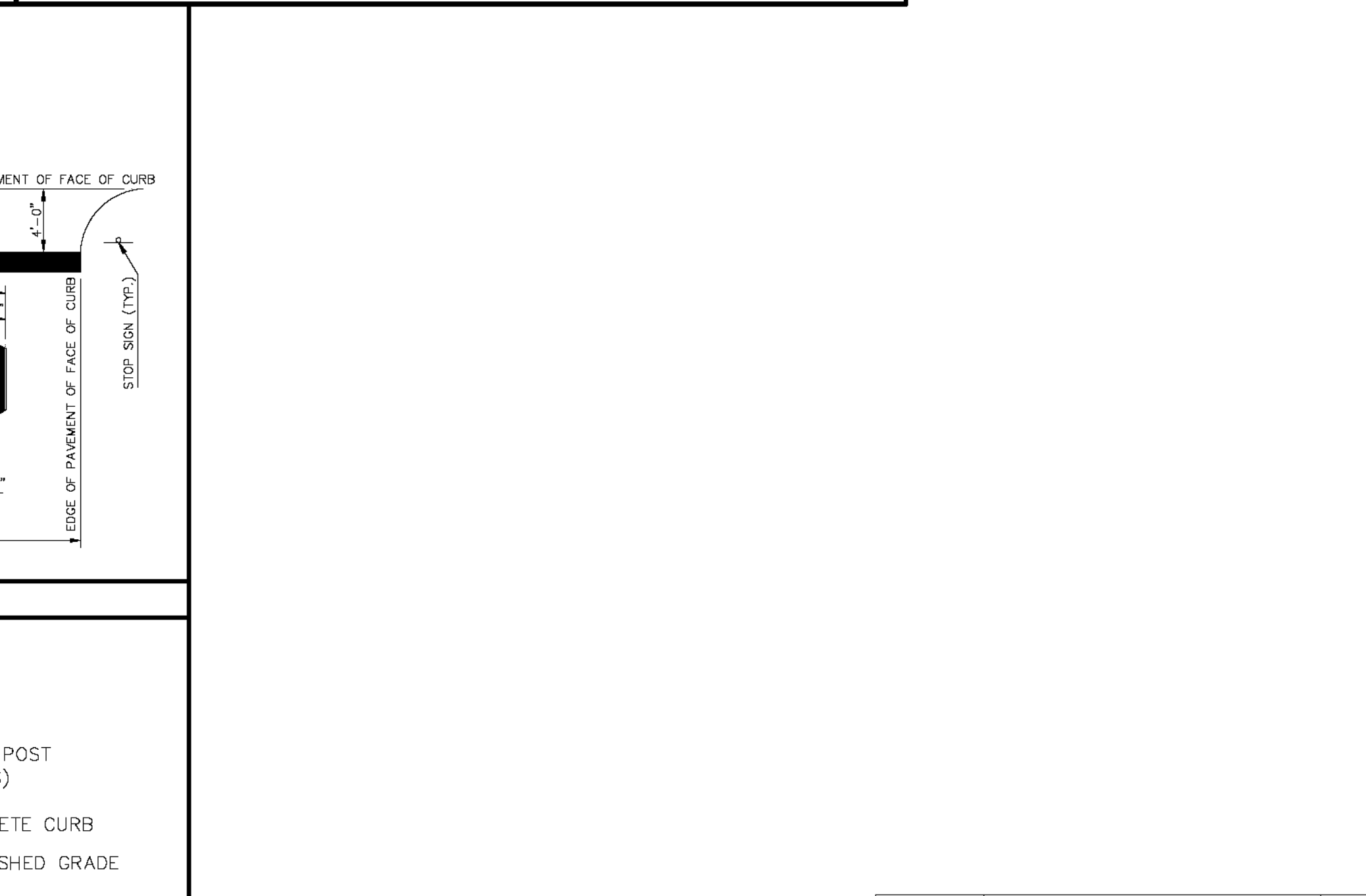
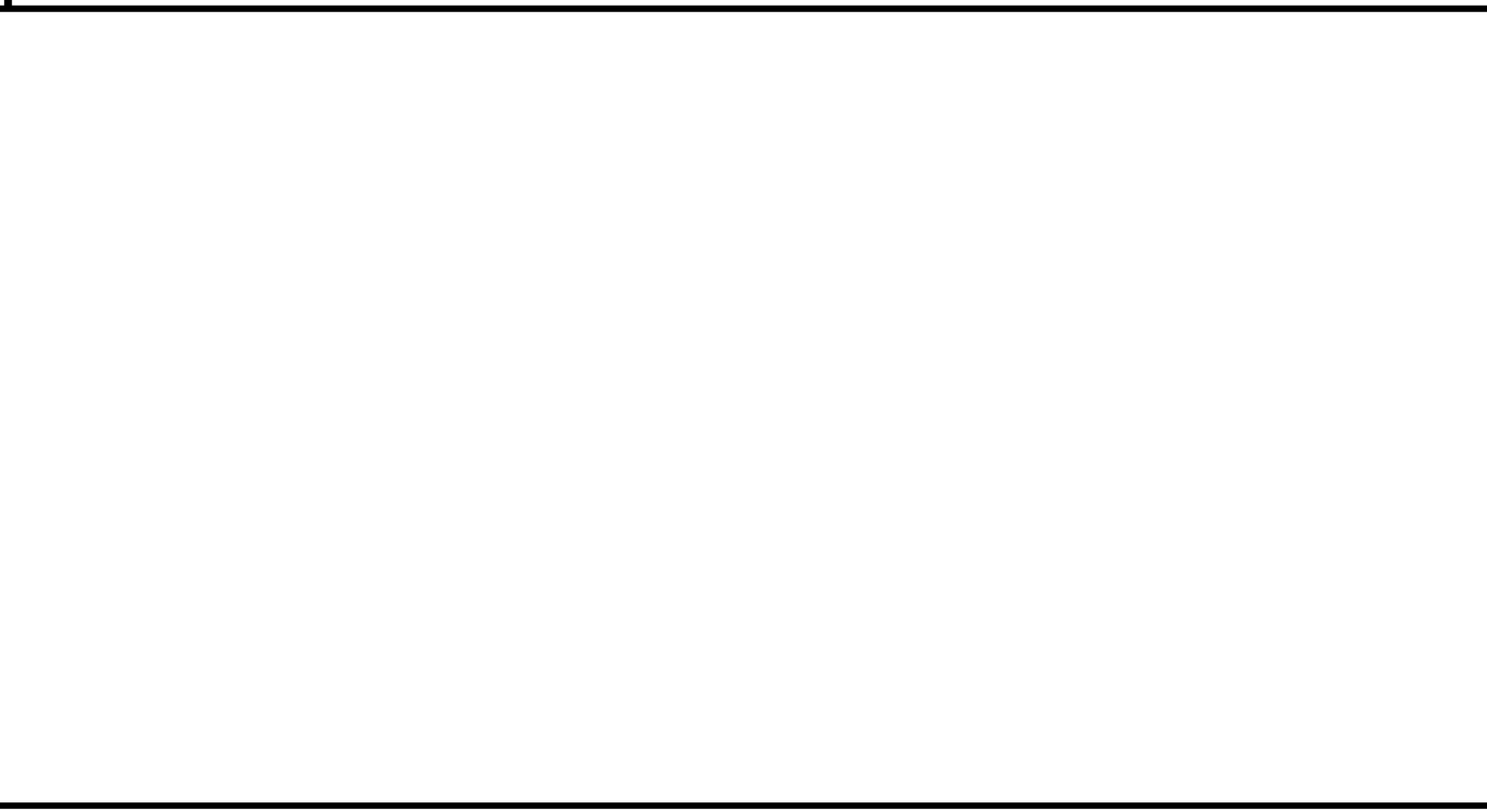
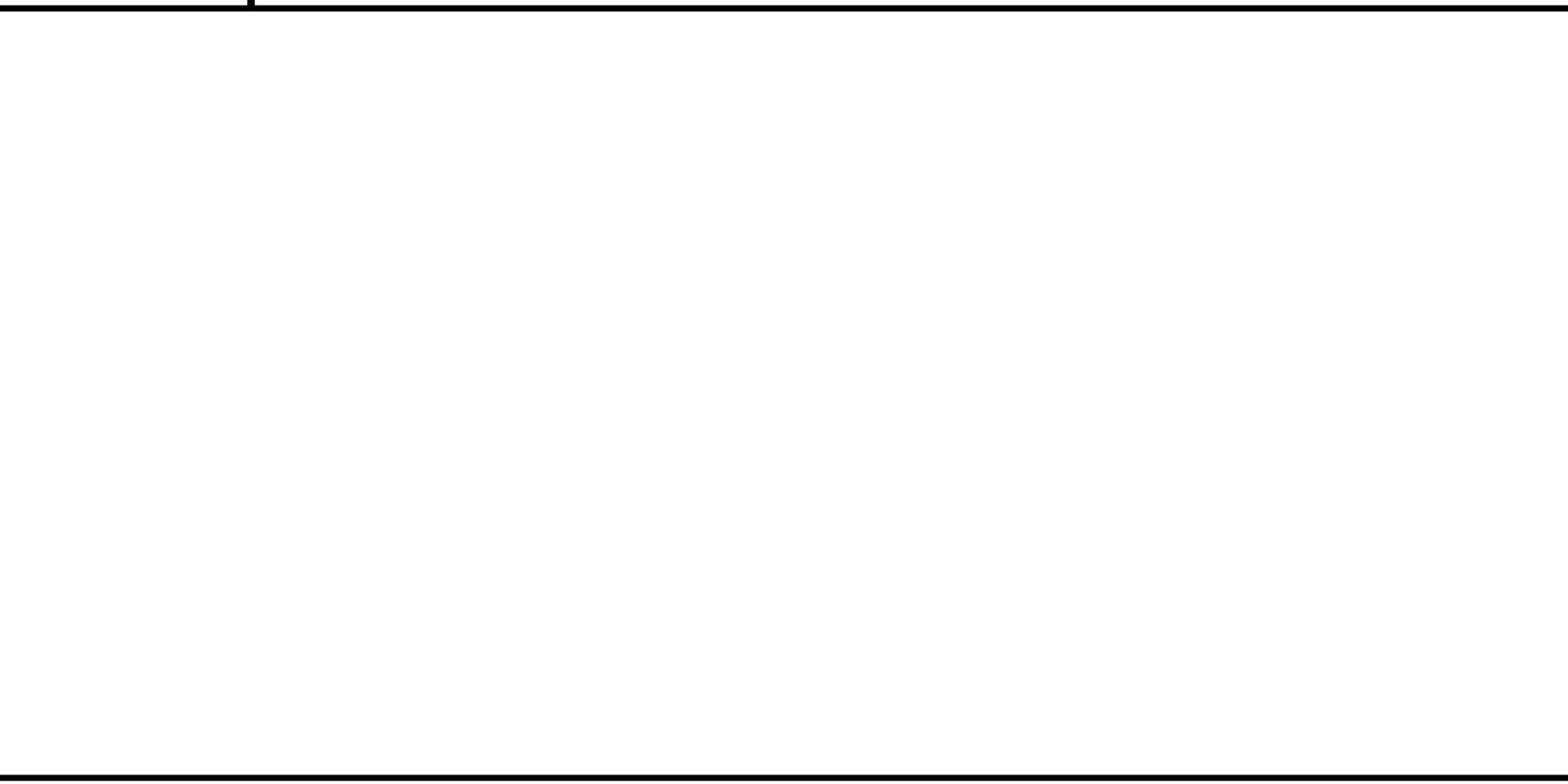
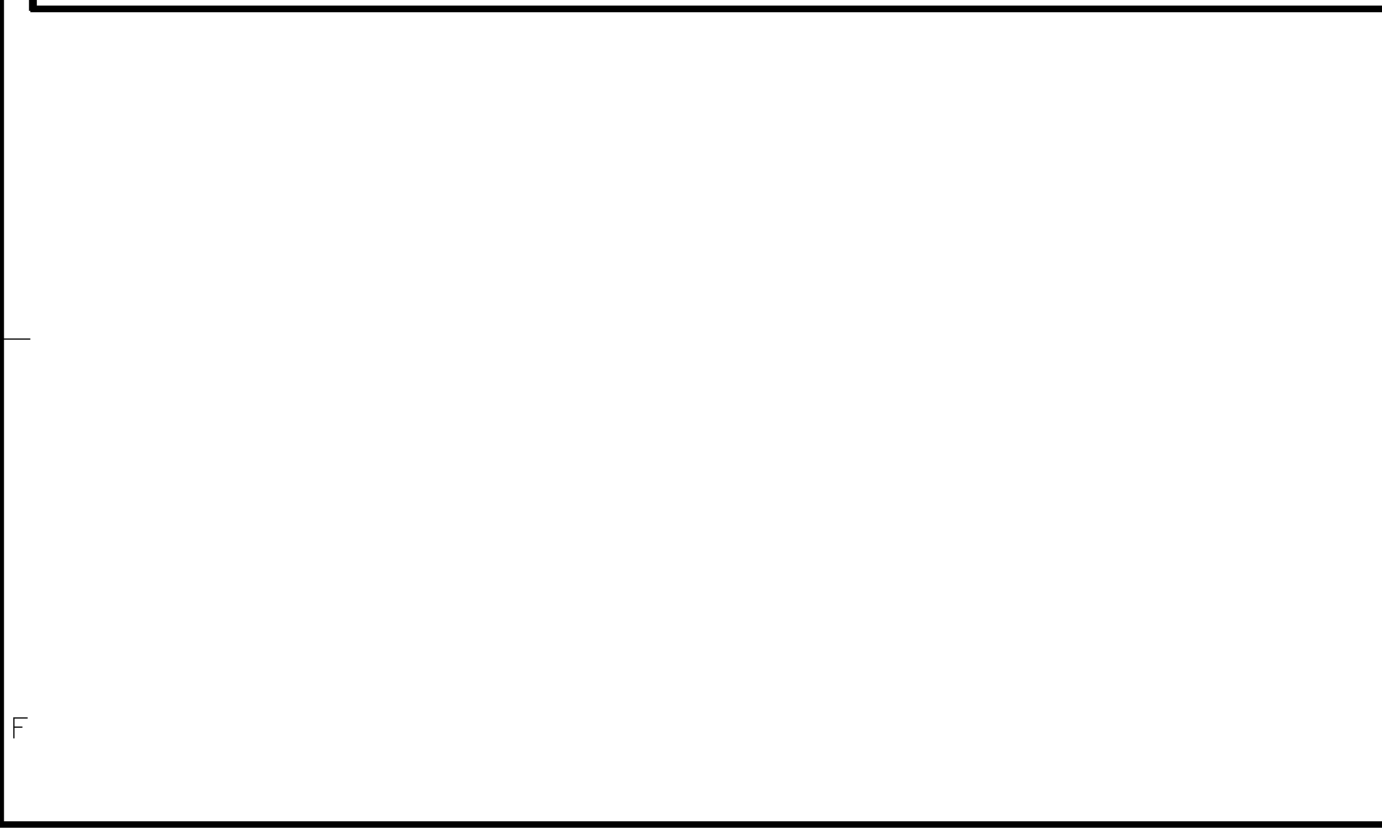
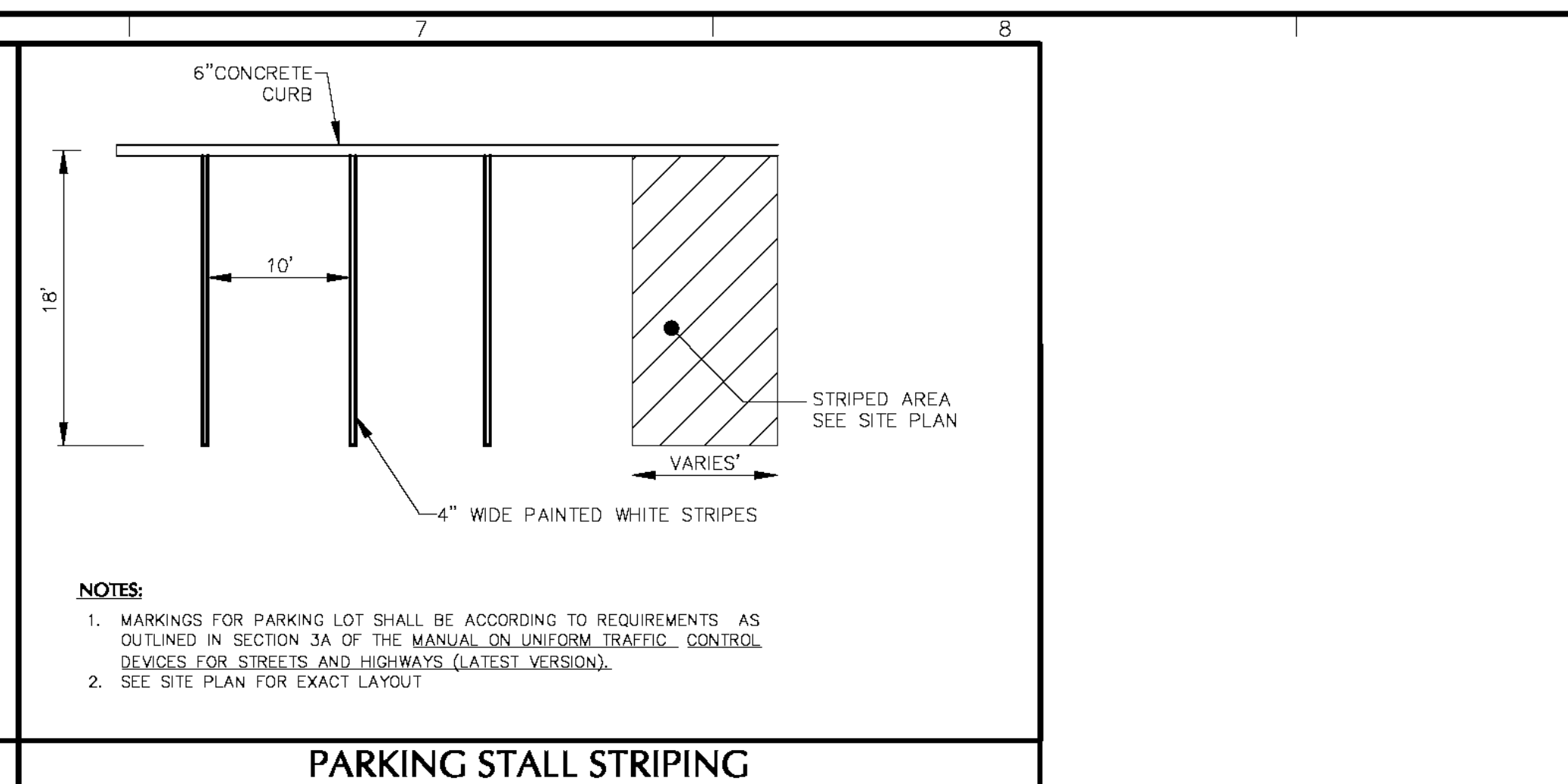
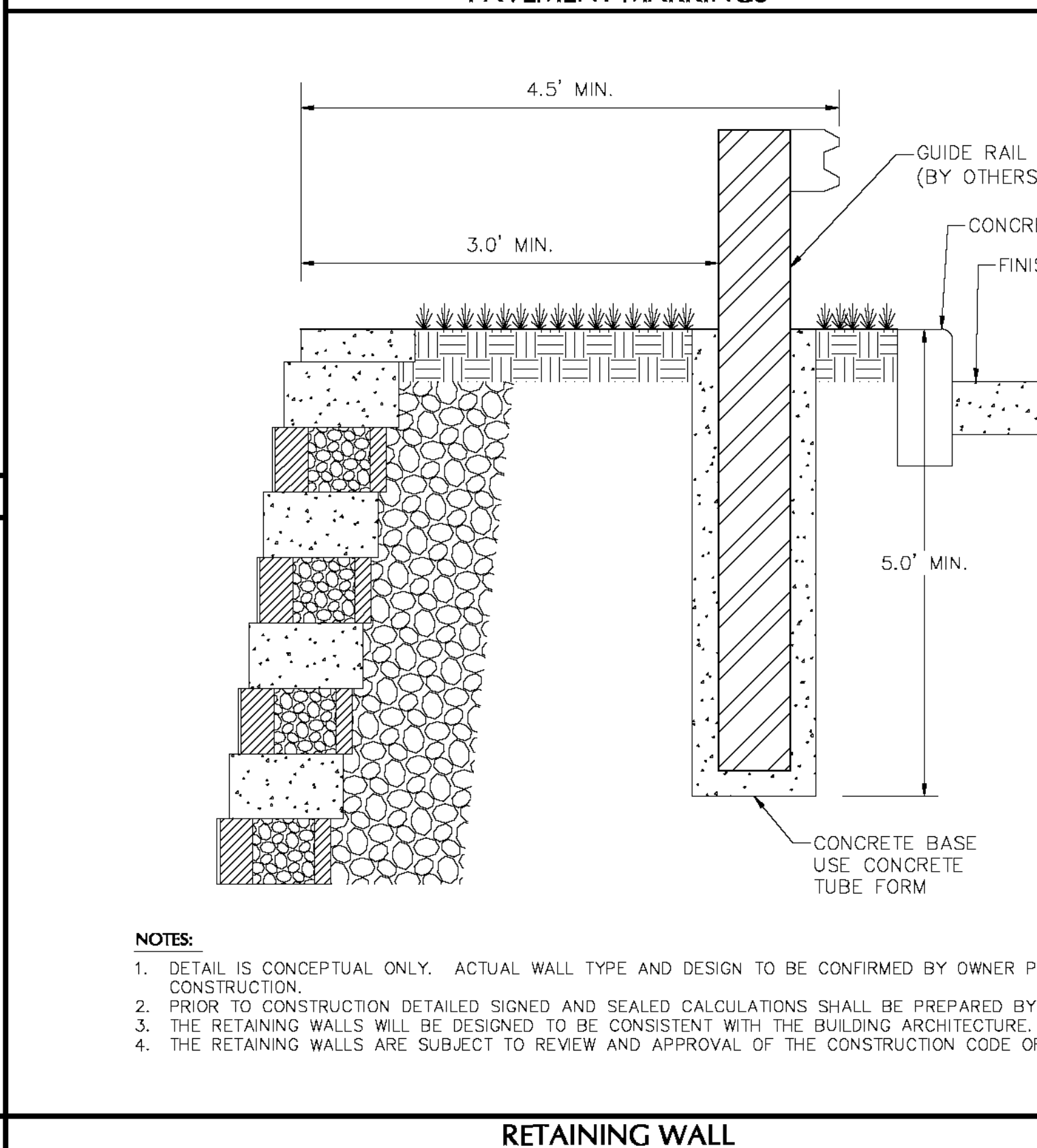
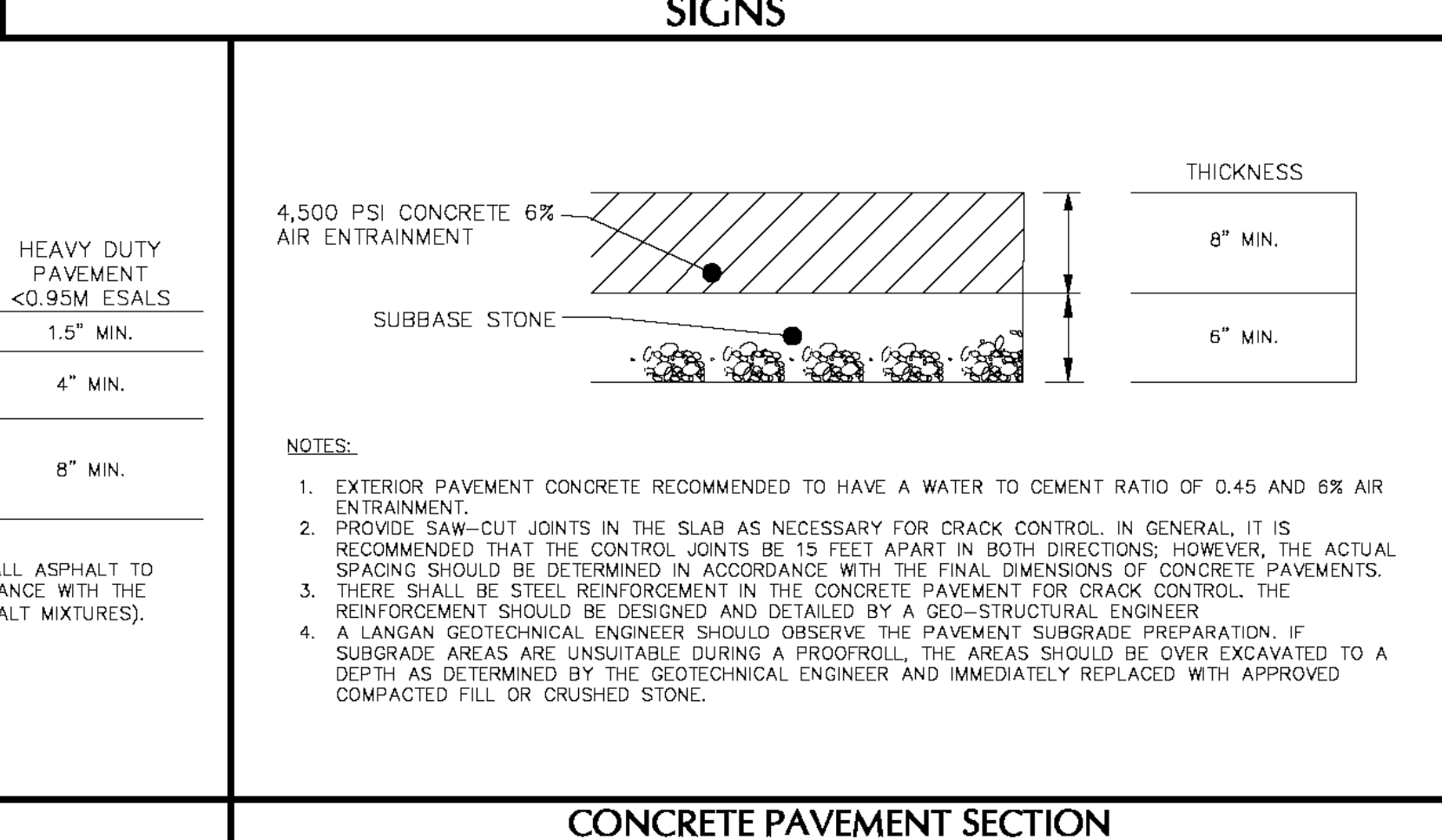
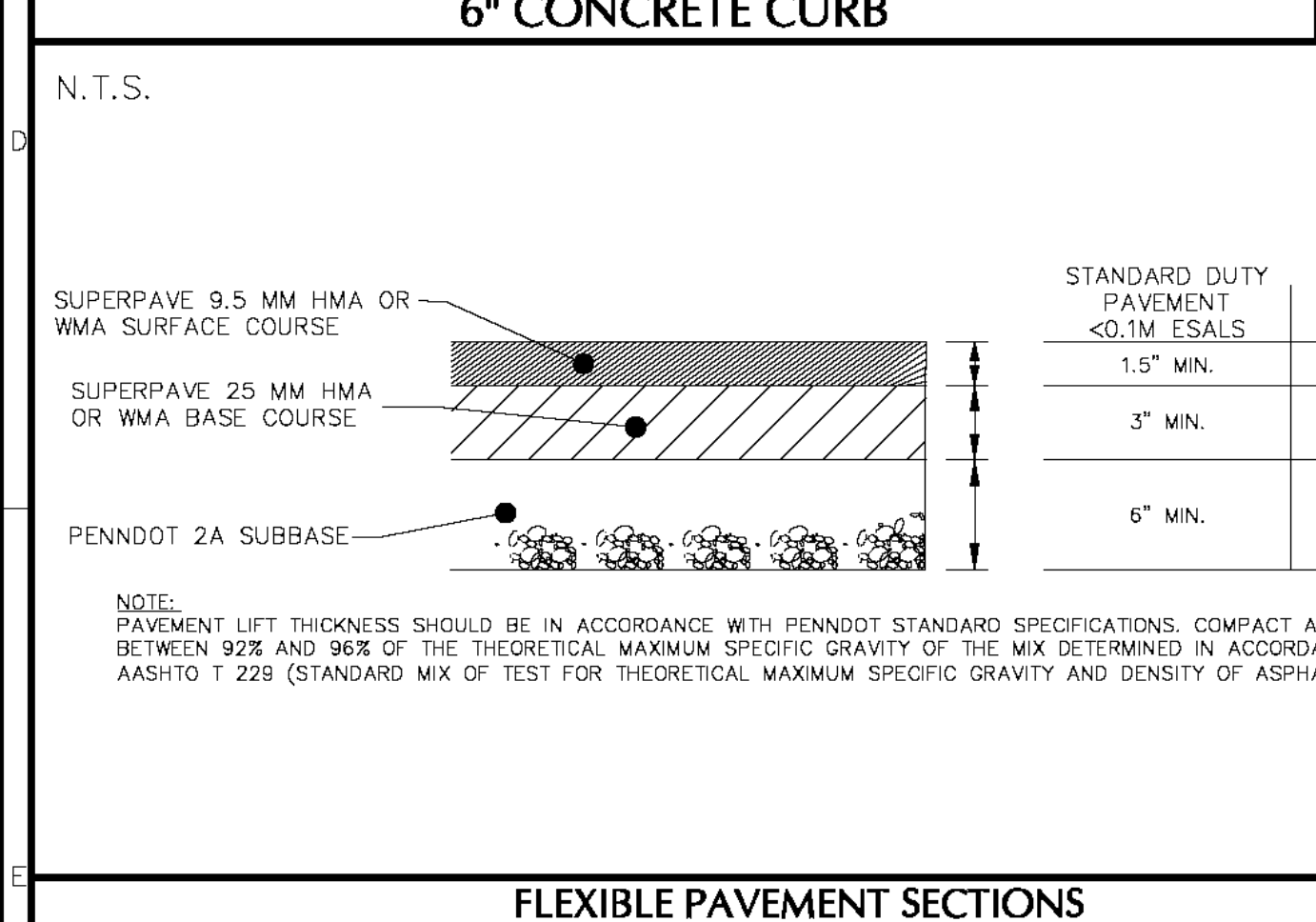
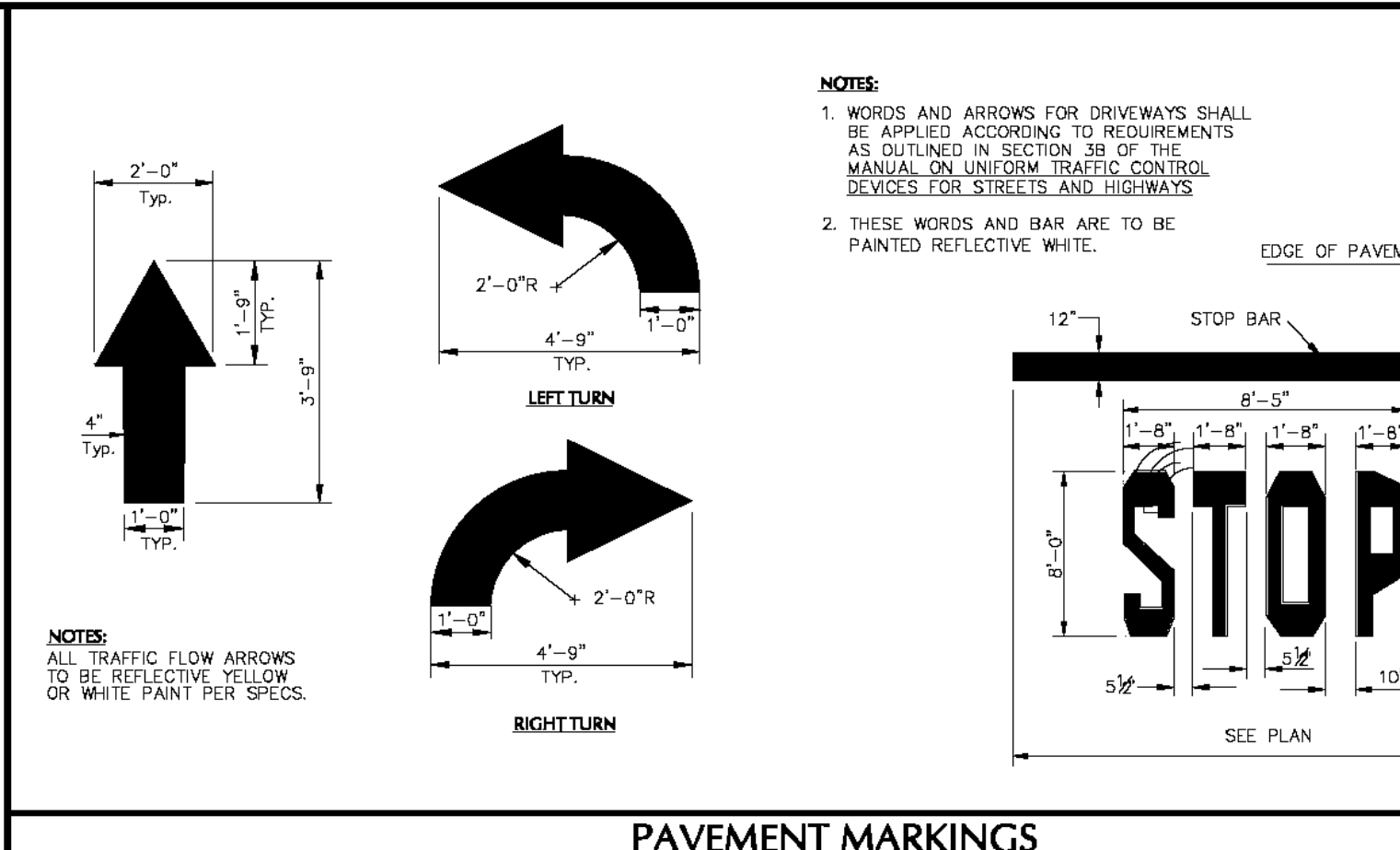
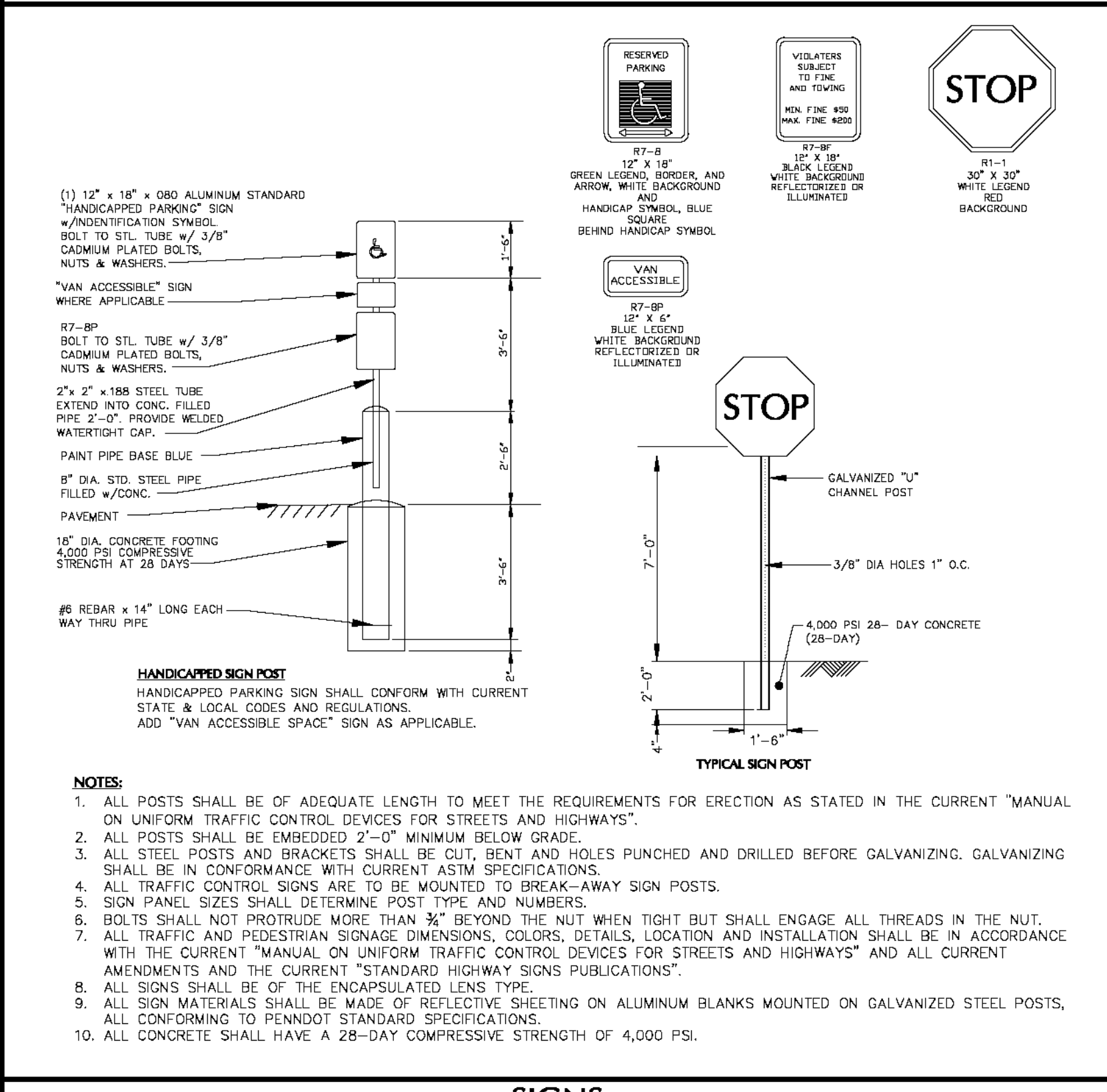
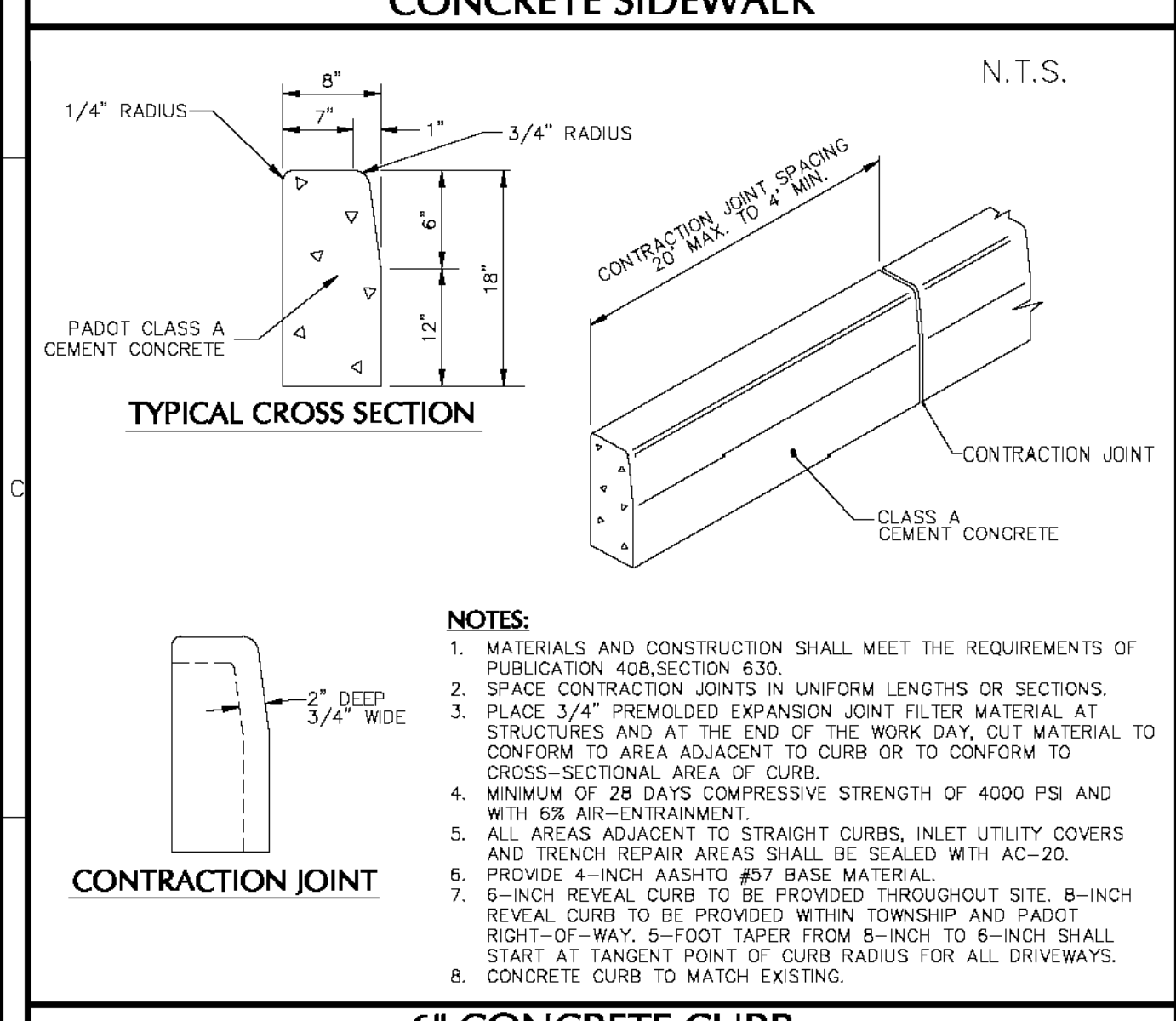
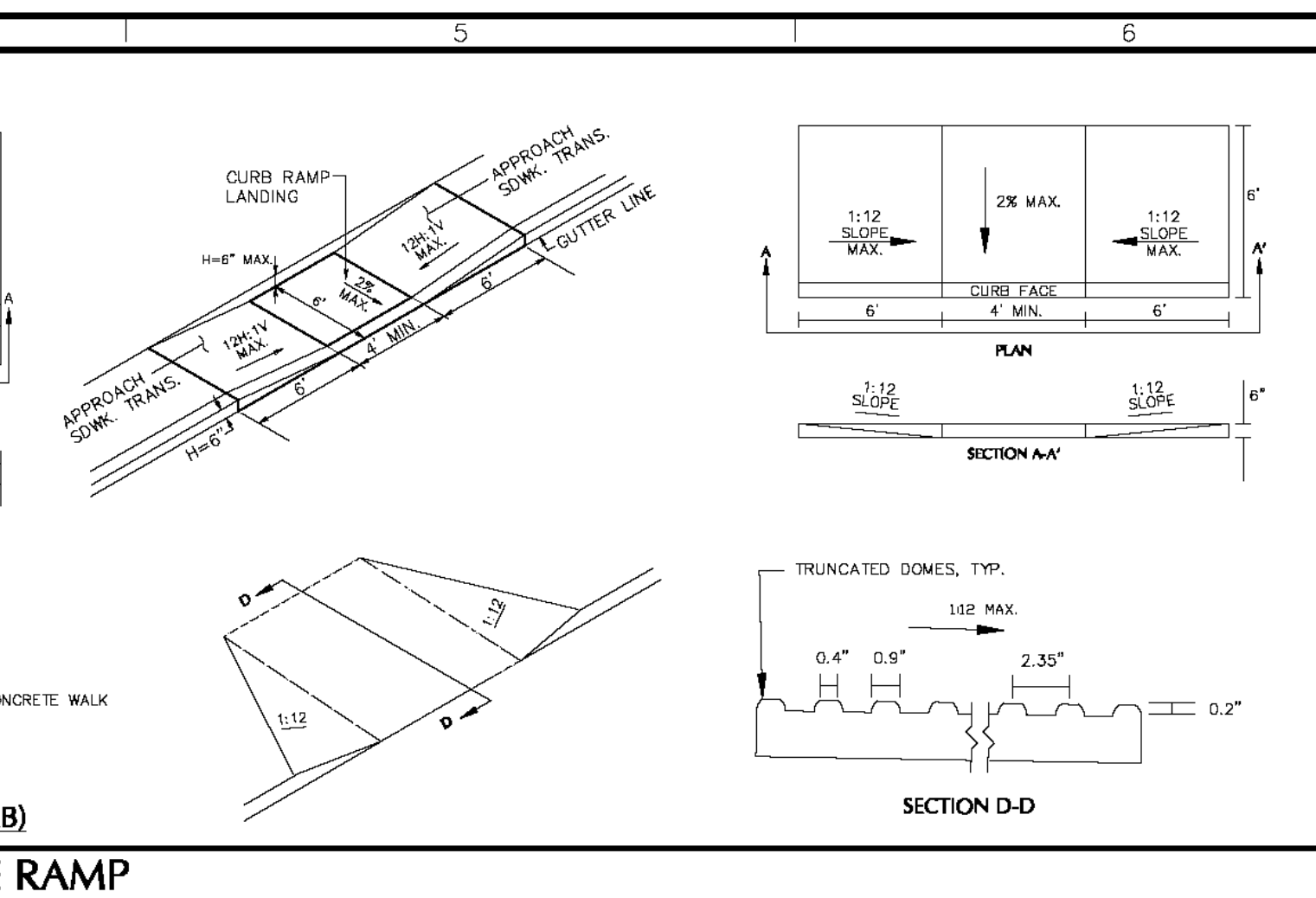
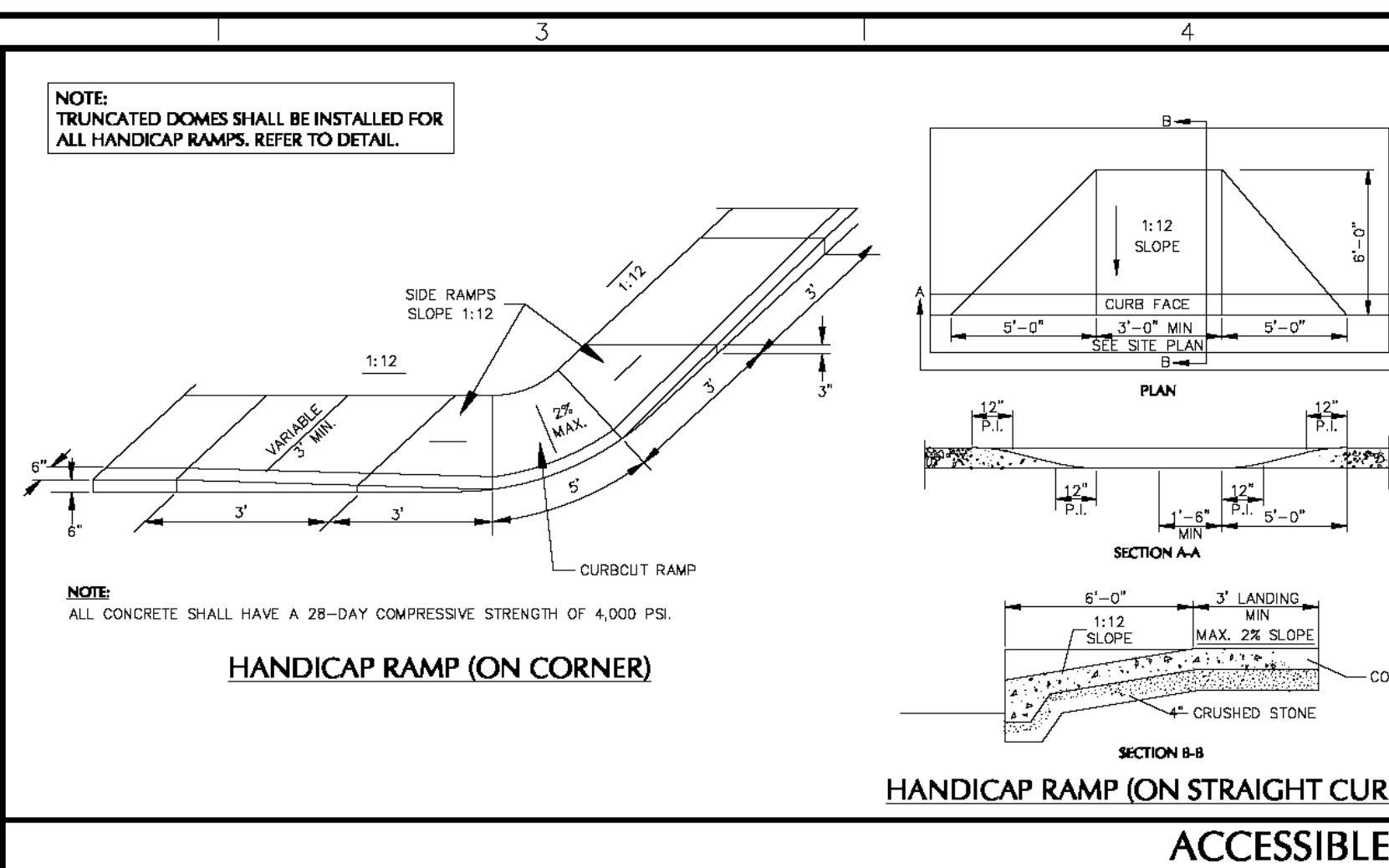
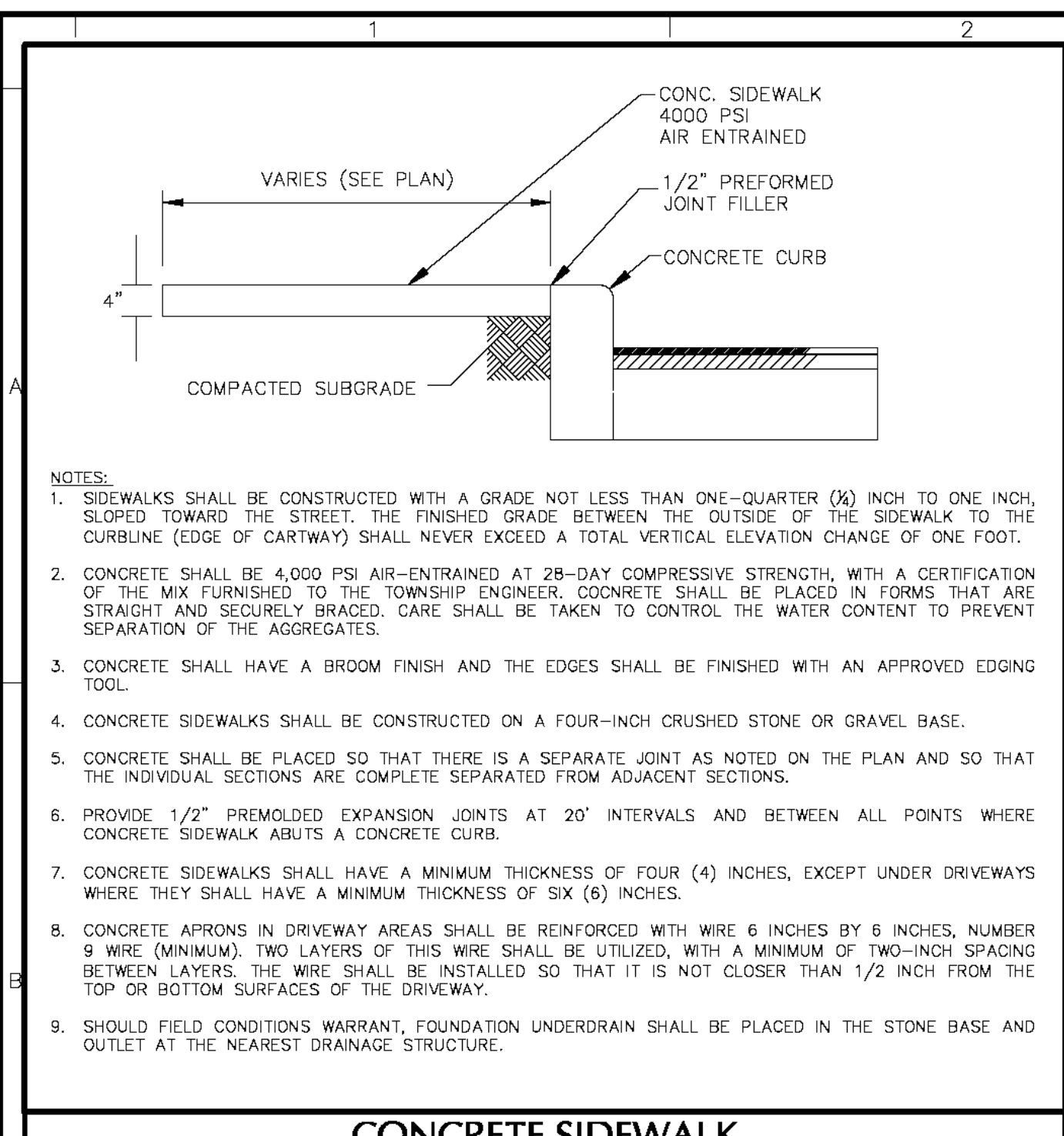
Project  
**NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS**  
ABINGTON TOWNSHIP  
MONTGOMERY COUNTY PENNSYLVANIA  
Drawing Title

**SITE CONSTRUCTION PLAN**

Project No. **220154401**  
Date **12 AUGUST 2025**  
Drawn By **TFH/AEB**  
Checked By **BMC**

**CS-101**  
Sheet 6 of 18





Date	Description	No.
Revisions		
BRIAN M. CONLON PROFESSIONAL ENGINEER PA Lic. No. PE061782		
Langan Engineering and Environmental Services, Inc. 1818 Market Street, Suite 3300 Philadelphia, PA 19103 T: 215.845.8900 F: 215.845.8901 www.langan.com		
Project		
<b>NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS</b> ABINGTON TOWNSHIP		
MONTGOMERY COUNTY		PENNSYLVANIA
Drawing Title		
<b>SITE CONSTRUCTION DETAILS</b>		
Project No.	220154401	<b>CS-501</b>
Date	12 AUGUST 2025	
Drawn By	TFH/AEB	
Checked By	BMC	
Sheet 7 of 18		

Project No. 220154401

LANGAN

**GENERAL SITE NOTES:**

- THE CONTRACTOR SHALL FURNISH, INSTALL, TEST AND COMPLETE ALL WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION, AS SUCH, THESE PLANS DO NOT COMPLETELY REPRESENT NOR ARE THEY INTENDED TO REPRESENT, ALL SPECIFIC INSTRUCTIONS REQUIRED FOR SITEWORK CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO CONSTRUCT ALL IMPROVEMENTS DEPICTED ON THESE PLANS IN ACCORDANCE WITH ALL APPLICABLE RULES, REGULATIONS AND LAWS IN EFFECT AT THE TIME OF CONSTRUCTION.
- THE CONTRACTOR SHALL ACCEPT THE SITE AS IS. THE CONTRACTOR SHALL ASSESS CONDITIONS, AND THE KIND, QUALITY AND QUANTITY OF WORK REQUIRED. THE OWNER AND ENGINEER MAKE NO GUARANTEE IN REGARD TO THE ACCURACY OF ANY INFORMATION THAT WAS OBTAINED DURING INVESTIGATIONS. THE CONTRACTOR SHALL MAKE A THOROUGH SITE INSPECTION IN ORDER TO FIELD CHECK EXISTING SITE CONDITIONS, CORRELATE CONDITIONS WITH THE DRAWINGS, AND RESOLVE ANY POSSIBLE CONSTRUCTION CONFLICTS WITH THE OWNER AND ENGINEER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL PERFORM ADDITIONAL TOPOGRAPHIC SURVEYS IF HE/SHE DEEMS NECESSARY, PROVIDED THEY ARE COORDINATED WITH THE OWNER. ANY CONDITIONS DEMAND BY THE CONTRACTOR THAT DIFFER FROM THE INFORMATION SHOWN ON THE DRAWINGS THAT ARE NOT BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO THE START OF WORK SHALL NOT BE CONSIDERED GROUNDS FOR ADDITIONAL PAYMENT OR CHANGES TO THE CONTRACT DURATION, OR ANY OTHER CLAIMS AGAINST THE OWNER OR OWNER'S ENGINEER.
- THE CONTRACTOR SHALL, WHEN HE/SHE DEEMS NECESSARY, PROVIDE A WRITTEN REQUEST FOR INFORMATION (RFI) TO THE OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE, AND ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITEWORK ITEM. THE RFI SHALL BE IN A FORM ACCEPTABLE TO OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE AND ENGINEER AND SHALL ALLOW FOR A MINIMUM OF THREE WORK DAYS FOR A WRITTEN REPLY. RFIS SHALL BE NUMBERED CONSECUTIVELY BY DATE SUBMITTED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITEWORK ITEMS CONSTRUCTED DIFFERENTLY THAN INTENDED OR AS DEPICTED ON THE PLANS.
- INFORMATION RELATED TO ELEVATIONS AND PROPOSED UTILITIES (SUCH AS ROADWAY GRADES, INVERT ELEVATIONS, RIM ELEVATIONS, GRATE ELEVATIONS, BUILDING FINISHED FLOOR ELEVATIONS, ETC.) MAY BE FOUND IN MORE THAN ONE LOCATION IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL SUFFICIENTLY REVIEW ALL PLANS, PROFILES AND ANY OTHER INFORMATION IN THE CONTRACT DOCUMENTS FOR CONSISTENCY PRIOR TO BID. ANY INCONSISTENCIES OR DISCREPANCIES THAT ARE FOUND BY THE CONTRACTOR OR HIS ASSIGNS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER IN WRITING, IN THE FORMAT OF AN RFI PRIOR TO BID.
- THERE ARE ADDITIONAL NOTES, SPECIFICATIONS AND REQUIREMENTS CONTAINED THROUGHOUT THE PLAN SET AS WELL AS REFERENCES TO SPECIFICATIONS FROM APPLICABLE GOVERNING AUTHORITIES AND INDUSTRY STANDARDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN, REVIEW AND ADHERE TO ALL THESE DOCUMENTS.
- CONTRACTOR IS SPECIFICALLY CAUTIONED THAT ALL CONSTRUCTION STAKEOUT FOR THIS PROJECT MUST BE COMPLETED FROM THE SITE SPECIFIC SURVEY CONTROL (HORIZONTAL AND VERTICAL) UPON WHICH THE DESIGN IS BASED. THE CONTRACTOR SHOULD NOT RELY ON RE-ESTABLISH SURVEY CONTROL BY GPS OR OTHER METHODS FOR USE IN CONSTRUCTION STAKEOUT OR ANY OTHER PURPOSE FOR THIS PROJECT. ANY DISCREPANCIES BETWEEN THE EXISTING HORIZONTAL OR VERTICAL DATA SHOWN ON THESE DRAWINGS AND THAT ENCOUNTERED IN THE FIELD MUST BE REPORTED TO THE DESIGN TEAM PRIOR TO CONSTRUCTION FOR RESOLUTION.

**GRADING AND DRAINAGE NOTES:**

- IF CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, HE SHALL HAVE MADE, AT HIS EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR AND SUBMIT IT TO THE OWNER FOR HIS REVIEW.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STORM DRAINAGE FACILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. ALL CONTRACTORS AND OTHER PERSONS UTILIZING THIS PLAN AND THE INFORMATION CONTAINED THEREON ARE CAUTIONED THAT EACH INDIVIDUAL USING THIS PLAN MUST VERIFY THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE STARTING WORK. CONTACT THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF EXISTING STRUCTURES INCLUDING REMOVAL OF ANY EXISTING UTILITIES SERVING THE STRUCTURE. UTILITIES ARE TO BE REMOVED TO THE RIGHT-OF-WAY. ALL PROBABLE AND OTHER ORGANIC MATTER SHALL BE REMOVED FROM THE CONSTRUCTION SITE. REFER TO DRAWING CG-101, THE SITE DEMOLITION PLAN, FOR ALL EXISTING FEATURES TO BE REMOVED.
- NO TOPSOIL SHALL BE REMOVED FROM THE SITE OR USED AS SPOIL. TOPSOIL MOVED DURING THE COURSE OF CONSTRUCTION SHALL BE REDEPOSITED SO AS TO PROVIDE AT LEAST SIX (6) INCHES OF COVER TO ALL VEGETATED AREAS OF THE SITE AND SHALL BE STABILIZED BY SEEDING OR PLANTING.
- SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED. THE EROSION AND SEDIMENTATION CONTROL PLAN IS AN INTEGRAL PART OF THE STORMWATER MANAGEMENT SYSTEM DURING CONSTRUCTION OF CERTAIN PHASES. THE EROSION AND SEDIMENTATION CONTROL PLANS SHALL BE REFERENCED AND USED IN CONJUNCTION WITH THIS DRAWING TO COMPLETE CONSTRUCTION PHASING.
- EXISTING DRAINAGE STRUCTURES ARE TO BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
- STORM DRAINAGE STRUCTURES SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THESE DRAWINGS. ALL DRAINAGE STRUCTURES SHALL BE PRE-CAST UNLESS SHOWN OTHERWISE.
- ALL CONNECTIONS TO STORM DRAINAGE STRUCTURES SHALL BE SUPPORTED BY MEANS OF A CONCRETE GRADE TO A POINT OUTSIDE OF THE WALL WHERE THE PIPE IS FULLY SUPPORTED ON UNDISTURBED SOIL. ALL STORM PIPE EXTERIOR STRUCTURES SHALL BE GROUDED TO ASSURE CONNECTION AT STRUCTURE IS WATER-TIGHT.
- STORM SEWER PIPES SHALL NOT ENTER THE CORNERS OF INLET BOXES. PIPE CONNECTIONS SHALL BE MADE AT THE SIDES OR ENDS OF BOXES.
- AT LOCATIONS WHERE PROPOSED DRAINAGE TIES INTO EXISTING DRAINAGE, INVERTS AND CONNECTIONS AT EXISTING STRUCTURES SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
- ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR INTERIOR FINISH.
- HOPE STORM PIPE SHALL BE PER ASTM F-2160, WITH JOINTS SEALED PER ASTM D-3212. BEDDING AND BACKFILL REQUIREMENTS FOR HOPE PIPE SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AS SHOWN ON DRAWING CG-501.
- TOP OF GRATE ELEVATIONS REPRESENT ELEVATIONS AT THE CURBLINE.
- THE SITE IS TO BE GRADED SMOOTHLY AND EVENLY IN ACCORDANCE WITH THE PROPOSED CONTOURS AND SPOT ELEVATIONS. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING A POSITIVE DRAINAGE FLOW TO ALL CATCH BASINS WITHOUT CREATING ANY FLAT SPOTS THAT WILL RESULT IN STANDING WATER (POUNDING OR PONDING). CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
- ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING RING & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE 6" ABOVE FINISH GRADE. LIDS SHALL BE LABELED "STORM SEWER".
- CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTIGUOUS GRADE. PAVEMENT SHALL BE SAW CUT IN STRAIGHT LINES TO THE FULL DEPTH OF THE EXISTING PAVEMENT. ALL DEBRIS FROM REMOVAL AND GRADING SHALL BE REMOVED IMMEDIATELY. STOCKPILING OF DEBRIS IS NOT PERMITTED.
- IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
- THE PROPERTY OWNER, BROWBOR PROPERTY GROUP, WILL BE RESPONSIBLE FOR ANY POST CONSTRUCTION STORMWATER MAINTENANCE AFTER DEDICATION.
- ALL CUT OR FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
- ALL CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH OF 4,000 PSI.
- CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
- SEWERWORK SHALL MEET OR EXCEED TENANT AND TOWNSHIP SITE SPECIFICATIONS.
- THE SUBSURFACE DRAINAGE SYSTEM SHALL BE CONSTRUCTED WITH WATER-TIGHT CONNECTIONS/GASKETS.
- ALL STORM SEWER PIPE LENGTHS ARE MEASURED FROM CENTER OF INLETS AND REPRESENT LINEAR FOOTAGE.
- ALL INLETS MUST BE EQUIPPED WITH BICYCLE SAFETY GRATES.
- REFER TO DRAWINGS CG-501 FOR STORM SEWER AND STORMWATER DETAILS.
- SPOT ELEVATIONS PROVIDED REPRESENT BOTTOM OF CURB ELEVATIONS, TOP OF CURB ELEVATIONS ARE PLUS 0.5' ABOVE BOTTOM OF CURB UNLESS OTHERWISE NOTED.
- SPOT ELEVATIONS SHOWN OFFSET FROM THE CURB AND GUTTER LINES ARE THE ELEVATIONS ALONG SAID LINES AND ARE SHOWN OFFSET FOR GRAPHICAL PURPOSES ONLY.
- ALL INLETS AND MANHOLES GREATER THAN FIVE FEET IN DEPTH WILL REQUIRE STEPS.
- SHOP DRAWINGS FOR ALL PREFABRICATED STRUCTURES SHALL BE SUBMITTED TO THE TOWNSHIP ENGINEERS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- THE LOCATIONS AND INVERTS OF ALL EXISTING UTILITY SERVICE LATERAL CONNECTIONS AND ROOF LEAKERS AT THE BUILDINGS SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION, AND ANY DISCREPANCIES OR CONFLICTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF LANGAN AND THE TOWNSHIP SEWER ENGINEER FOR ADDITIONAL DESIGN CONSIDERATIONS.

(DESIGN ENGINEER), ON THIS DATE (DATE OF SIGNATURE),  
HEREBY CERTIFY THAT THE DRAINAGE PLAN MEETS ALL REQUIREMENTS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION'S (DEP'S) REGULATIONS AND THIS CHAPTER.

APPLICANT \_\_\_\_\_ DATE \_\_\_\_\_

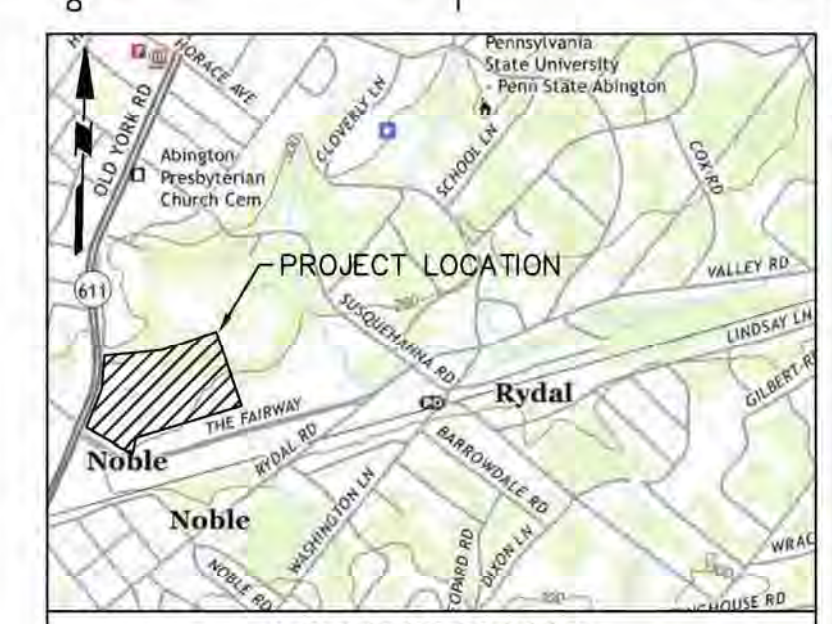
ANY REVISION TO THE APPROVED DRAINAGE PLAN MUST BE APPROVED BY THE MUNICIPALITY AND THAT A REVISED EROSION AND SEDIMENT CONTROL PLAN MUST BE SUBMITTED TO THE MUNICIPALITY OR CONSERVATION DISTRICT FOR APPROVAL.

APPLICANT \_\_\_\_\_ DATE \_\_\_\_\_

(MUNICIPAL OFFICIAL OR DESIGNEE), ON THIS DATE (DATE OF SIGNATURE), HAS REVIEWED AND HEREBY CERTIFIES THAT THE SWM SITE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE MUNICIPAL ORDINANCE NO. \_\_\_\_\_

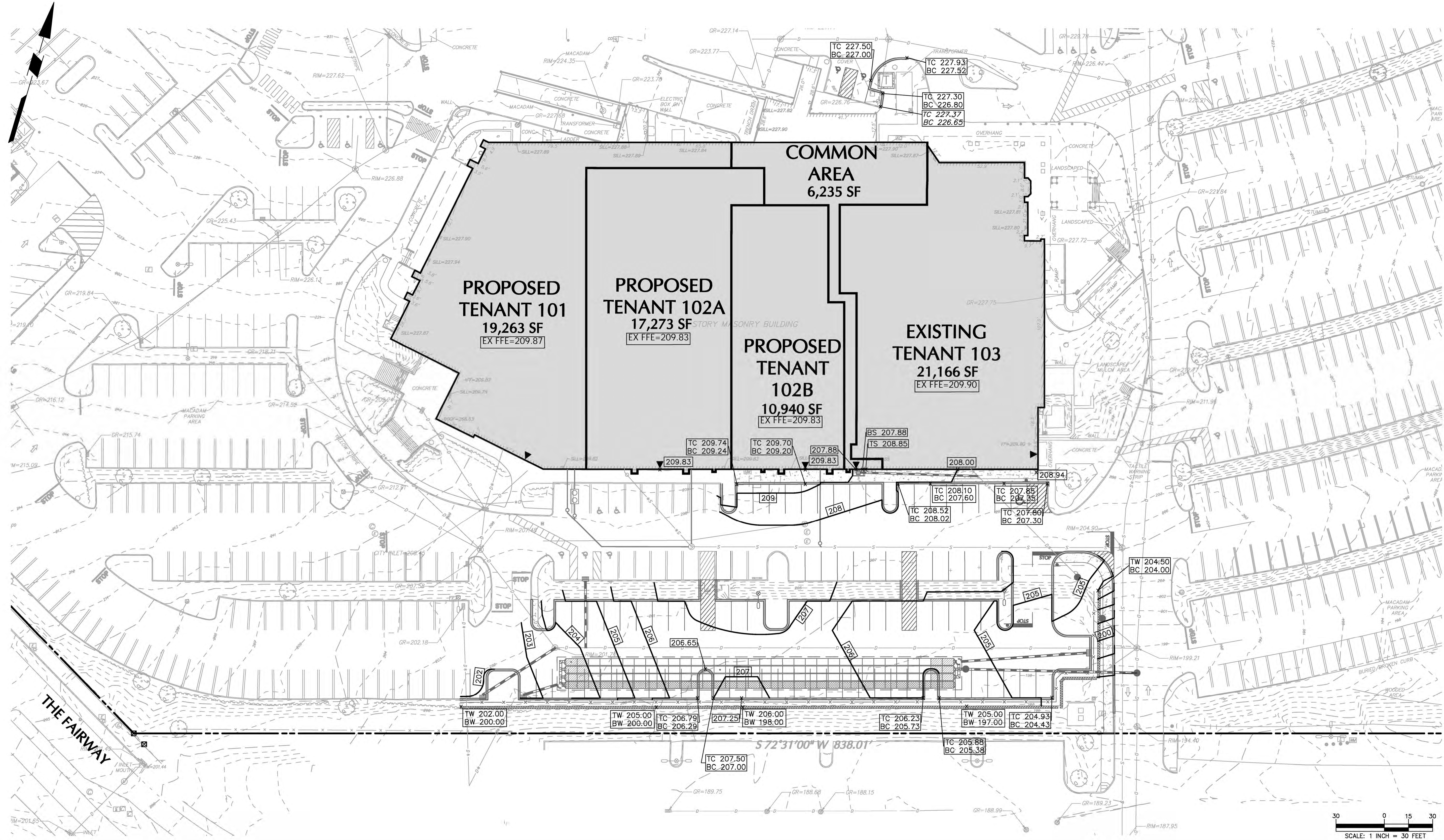
SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

**ALL CATCH BASINS SHALL BE INSTALLED WITH WATER QUALITY INLET (SNOUT OR APPROVED EQUAL) (REFER TO CONSTRUCTION DETAILS)**

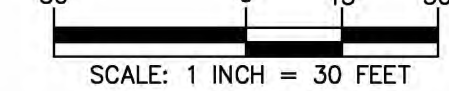


**LEGEND**

- 48 — EXISTING CONTOUR
- D- EXISTING STORM PIPE
- EXISTING STORM INLET
- EXISTING STORM MANHOLE
- S- EXISTING SANITARY SEWER
- W- EXISTING WATER
- G- EXISTING GAS
- T&E- EXISTING TELEPHONE/ELECTRIC
- × 15.50 EXISTING SPOT ELEVATION
- — — — — PROPERTY LINE
- × 15.50 PROPOSED SPOT ELEVATION
- × TC 15.50 BC 15.00 PROPOSED TOP OF CURB & BOTTOM OF CURB ELEVATION
- PROPOSED CONTOUR
- PROPOSED STORM PIPE
- PROPOSED STORM INLET



Date	Description	No.
Revisions		
BRIAN M. CONLON PROFESSIONAL ENGINEER PA Lic. No. PE061782		
Langan Engineering and Environmental Services, Inc. 1818 Market Street, Suite 3300 Philadelphia, PA 19103 T: 215.845.8900 F: 215.845.8901 www.langan.com		
Project <b>NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS</b> ABINGTON TOWNSHIP MONTGOMERY COUNTY PENNSYLVANIA		
Drawing Title <h1 style="text-align: center;">GRADING PLAN</h1>		
Project No.	220154401	<h1>CG-101</h1>
Date	12 AUGUST 2025	
Drawn By	TFH/AEB	
Checked By	BMC	
Sheet 8 of 18		



**GENERAL SITE NOTES:**

- THE CONTRACTOR SHALL FURNISH, INSTALL, TEST AND COMPLETE ALL WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION. AS SUCH, THESE PLANS DO NOT COMPLETELY REPRESENT, NOR ARE THEY INTENDED TO REPRESENT, ALL SPECIFIC INSTRUCTIONS REQUIRED FOR SITEWORK CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO CONSTRUCT ALL IMPROVEMENTS DEPICTED ON THESE PLANS IN ACCORDANCE WITH ALL APPLICABLE RULES, REGULATIONS AND LAWS IN EFFECT AT THE TIME OF CONSTRUCTION.
- THE CONTRACTOR SHALL ACCEPT THE SITE AS IS. THE CONTRACTOR SHALL ASSESS CONDITIONS, AND THE KIND, QUALITY AND QUANTITY OF WORK REQUIRED. THE OWNER AND ENGINEER MAKE NO GUARANTEE IN REGARD TO THE ACCURACY OF ANY INFORMATION THAT WAS OBTAINED DURING INVESTIGATIONS. THE CONTRACTOR SHALL MAKE A THOROUGH SITE INSPECTION IN ORDER TO FIELD CHECK EXISTING SITE CONDITIONS, CORRELATE CONDITIONS WITH THE DRAWINGS, AND RESOLVE ANY POSSIBLE CONFLICTS WITH THE OWNER AND ENGINEER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL PERFORM ADDITIONAL TOPOGRAPHIC SURVEYS HE/SHE DEEMS NECESSARY, PROVIDED THEY ARE COORDINATED WITH THE OWNER. ANY CONDITIONS DETECTED BY THE CONTRACTOR THAT DIFFER FROM THE INFORMATION SHOWN ON THE DRAWINGS THAT ARE NOT BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO THE START OF WORK SHALL NOT BE CONSIDERED GROUNDS FOR ADDITIONAL PAYMENT OR CHANGES TO THE CONTRACT DURATION, OR ANY OTHER CLAIMS AGAINST THE OWNER OR OWNER'S ENGINEER.
- THE CONTRACTOR SHALL, WHEN HE/SHE DEEMS NECESSARY, PROVIDE A WRITTEN REQUEST FOR INFORMATION (RFI) TO THE OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE, AND ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITEWORK ITEM. THE RFI SHALL BE IN A FORM ACCEPTABLE TO OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE AND ENGINEER AND SHALL ALLOW FOR A MINIMUM OF THREE WORK DAYS FOR A WRITTEN REPLY. RFIs SHALL BE NUMBERED CONSECUTIVELY BY DATE SUBMITTED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITEWORK ITEMS CONSTRUCTED DIFFERENTLY THAN INTENDED OR AS DEPICTED ON THE PLANS.
- INFORMATION RELATED TO ELEVATIONS AND PROPOSED UTILITIES (SUCH AS ROADWAY GRADES, INVERT ELEVATIONS, RIM ELEVATIONS, GRATE ELEVATIONS, BUILDING FINISHED FLOOR ELEVATIONS, ETC.) MAY BE FOUND IN MORE THAN ONE LOCATION IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL SUFFICIENTLY REVIEW ALL PLANS, PROFILES AND ANY OTHER INFORMATION IN THE CONTRACT DOCUMENTS FOR CONSISTENCY PRIOR TO BID. ANY INCONSISTENCIES OR DISCREPANCIES THAT ARE FOUND BY THE CONTRACTOR OR HIS ASSIGNS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER IN WRITING, IN THE FORMAT OF AN RFI PRIOR TO BID.
- THERE ARE ADDITIONAL NOTES, SPECIFICATIONS AND REQUIREMENTS CONTAINED THROUGHOUT THE PLAN SET AS WELL AS REFERENCES TO SPECIFICATIONS FROM APPLICABLE GOVERNING AUTHORITIES AND INDUSTRY STANDARDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN, REVIEW AND ADHERE TO ALL THESE DOCUMENTS.
- CONTRACTOR IS SPECIFICALLY CAUTIONED THAT ALL CONSTRUCTION STAKEOUT FOR THIS PROJECT MUST BE COMPLETED FROM THE SITE SPECIFIC SURVEY CONTROL (HORIZONTAL AND VERTICAL) UPON WHICH THE DESIGN IS BASED. THE CONTRACTOR SHOULD NOT RELY ON OR RE-ESTABLISH SURVEY CONTROL BY GPS OR OTHER METHODS FOR USE IN CONSTRUCTION STAKEOUT OR ANY OTHER PURPOSE FOR THIS PROJECT. ANY DISCREPANCIES BETWEEN THE EXISTING HORIZONTAL OR VERTICAL DATA SHOWN ON THESE DRAWINGS AND THAT ENCOUNTERED IN THE FIELD MUST BE REPORTED TO THE DESIGN TEAM PRIOR TO CONSTRUCTION FOR RESOLUTION.

**GRADING AND DRAINAGE NOTES:**

- IF CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON PLANS, WITHOUT EXCEPTION, HE SHALL HAVE MADE, AT HIS EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR AND SUBMIT IT TO THE OWNER FOR HIS REVIEW.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STORM DRAINAGE FACILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. ALL CONTRACTORS AND OTHER PERSONS UTILIZING THIS PLAN AND THE INFORMATION CONTAINED THEREON ARE CAUTIONED THAT EACH INDIVIDUAL USING THIS PLAN MUST VERIFY THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE STARTING WORK. CONTACT THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND DEPTH OF ALL UNDERGROUND UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF EXISTING STRUCTURES INCLUDING REMOVAL OF ANY EXISTING UTILITIES SERVING THE STRUCTURE. UTILITIES ARE TO BE REMOVED TO THE RIGHT-OF-WAY. ALL PERMISSIBLE AND OTHER ORGANIC MATERIAL SHALL BE REMOVED FROM THE CONSTRUCTION SITE. REFER TO DRAWING CO-10, THE SITE DEMOLITION PLAN, FOR ALL EXISTING FEATURES TO BE REMOVED.
- NO TOPSOIL SHALL BE REMOVED FROM THE SITE OR USED AS SPILL TOPSOIL MOVED DURING THE COURSE OF CONSTRUCTION SHALL BE REDISTRIBUTED SO AS TO PROVIDE AT LEAST SIX (6) INCHES OF COVER TO ALL VEGETATED AREAS OF THE SITE AND SHALL BE STABILIZED BY SEEDING OR PLANTING.
- SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED. THE EROSION AND SEDIMENTATION CONTROL PLAN IS AN INTEGRAL PART OF THE STORMWATER MANAGEMENT SYSTEM DURING CONSTRUCTION OF CERTAIN PHASES. THE EROSION AND SEDIMENTATION CONTROL PLANS SHALL BE REFERENCED AND USED IN CONSTRUCTION WITH THIS DRAWING TO COMPLETE CONSTRUCTION PHASING.
- EXISTING DRAINAGE STRUCTURES ARE TO BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
- STORM DRAINAGE STRUCTURES SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THE DRAWINGS AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS AS SHOWN ON SHEET CO-501. ALL DRAINAGE STRUCTURES SHALL BE PRE-CAST UNLESS OTHERWISE NOTED.

- ALL CONNECTIONS TO STORM DRAINAGE STRUCTURES SHALL BE SUPPORTED BY MEANS OF A CONCRETE GRADE TO A POINT OUTSIDE OF THE WALL WHERE THE PIPE IS FINALLY SUPPORTED ON UNDISTURBED SOIL. STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATER-TIGHT.
- STORM SEWER PIPES SHALL NOT ENTER THE CORNERS OF INLET BOXES. PIPE CONNECTIONS SHALL BE MADE AT THE SIDES OR ENDS OF BOXES.
- AT LOCATIONS WHERE PROPOSED DRAINAGE TIES INTO EXISTING DRAINAGE, INVERTS AND CONNECTIONS AT EXISTING STRUCTURES SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
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- HOPE STORM PIPE SHALL BE PER ASTM F-2180, WITH JOINTS SEALED PER ASTM D-3212. BEDDING AND BACKFILL REQUIREMENTS FOR HOPE PIPE SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AS SHOWN ON DRAWING CO-501.
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- ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING RINGS & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE 6" ABOVE FINISH GRADE. LIDS SHALL BE LABELED "STORM SEWER".
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- ALL CUT OR FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
- ALL CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH OF 4,000 PSI.
- CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
- STEWORK SHALL MEET OR EXCEED TENANT AND TOWNSHIP SITE SPECIFICATIONS.
- THE SUBSURFACE DRAINAGE SYSTEM SHALL BE CONSTRUCTED WITH WATER-TIGHT CONNECTIONS/GASKETS.
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- THE PROPERTY OWNER, BRIMOR PROPERTY GROUP, WILL BE RESPONSIBLE FOR ANY POST CONSTRUCTION STORMWATER MAINTENANCE AFTER DEDICATION.

(DESIGN ENGINEER), ON THIS DATE (DATE OF SIGNATURE), HEREBY CERTIFY THAT THE DRAINAGE PLAN MEETS ALL REQUIREMENTS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION'S (DEP'S) REGULATIONS AND THIS CHAPTER.

APPLICANT \_\_\_\_\_ DATE \_\_\_\_\_

ANY REVISION TO THE APPROVED DRAINAGE PLAN MUST BE APPROVED BY THE MUNICIPALITY AND THAT A REVISED EROSION AND SEDIMENT CONTROL PLAN MUST BE SUBMITTED TO THE MUNICIPALITY OR CONSERVATION DISTRICT FOR APPROVAL.

APPLICANT \_\_\_\_\_ DATE \_\_\_\_\_

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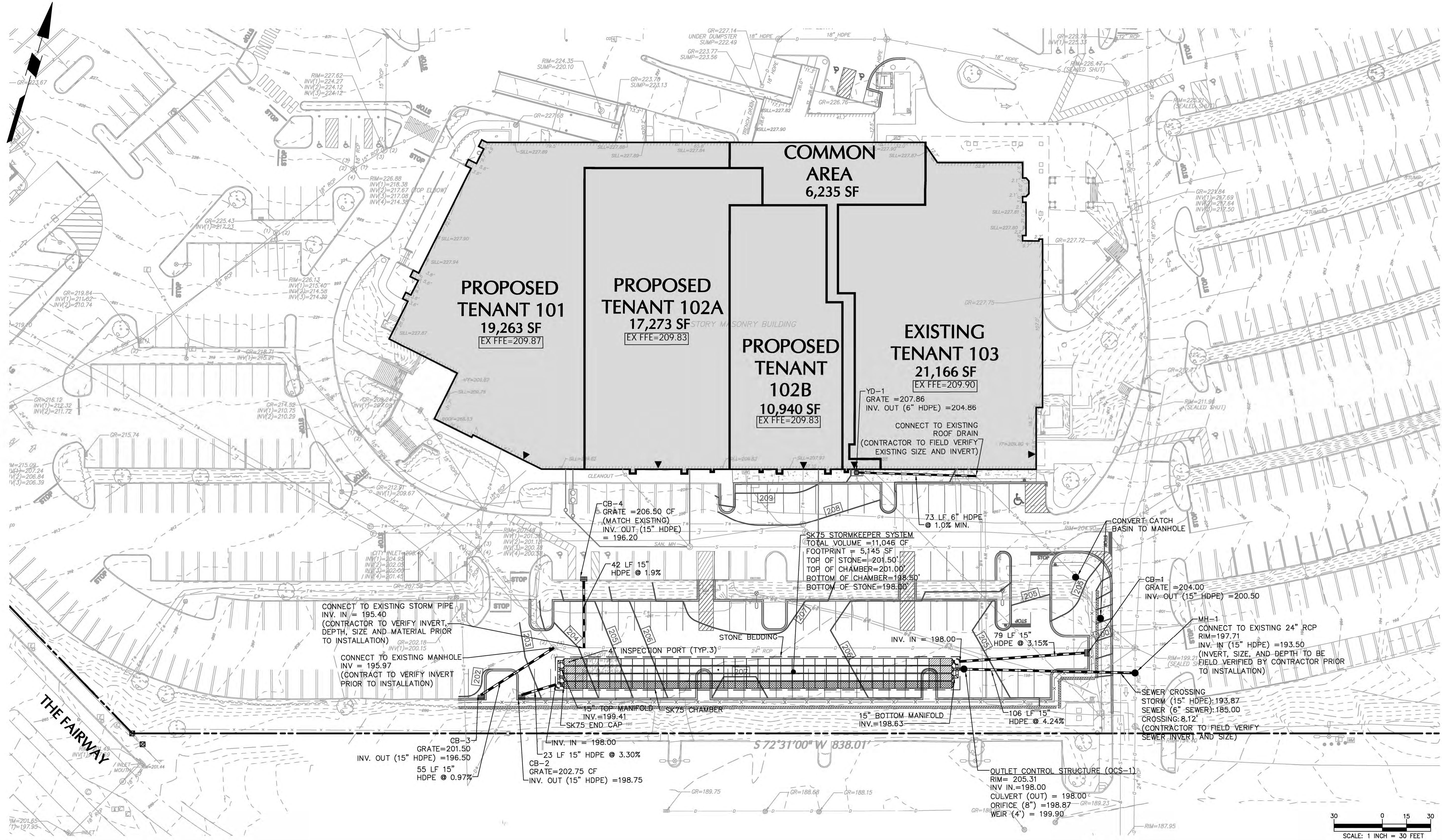
SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

**ALL PROPOSED CATCH BASINS SHALL BE INSTALLED WITH WATER QUALITY INLET (SNOUT OR APPROVED EQUAL) (REFER TO CONSTRUCTION DETAILS)**

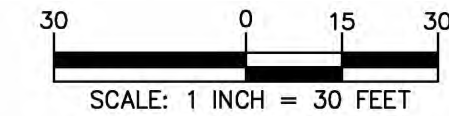


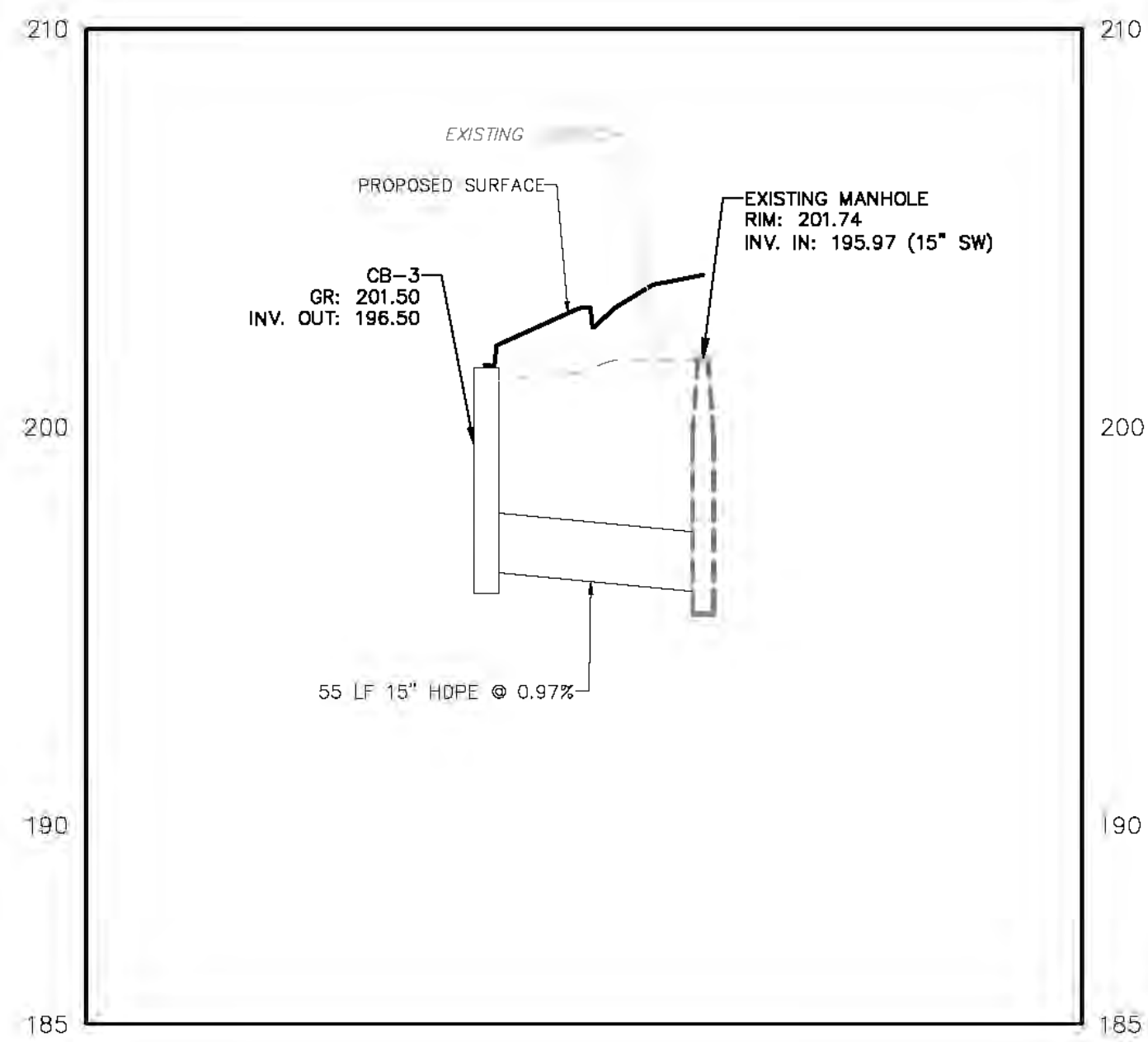
**LEGEND**

- 48 EXISTING CONTOUR
- D EXISTING STORM PIPE
- EXISTING STORM INLET
- EXISTING STORM MANHOLE
- S EXISTING SANITARY SEWER
- W EXISTING WATER
- G EXISTING GAS
- T&E EXISTING TELEPHONE/ELECTRIC
- PROPERTY LINE
- PROPOSED CONTOUR
- PROPOSED STORM PIPE
- PROPOSED STORM INLET

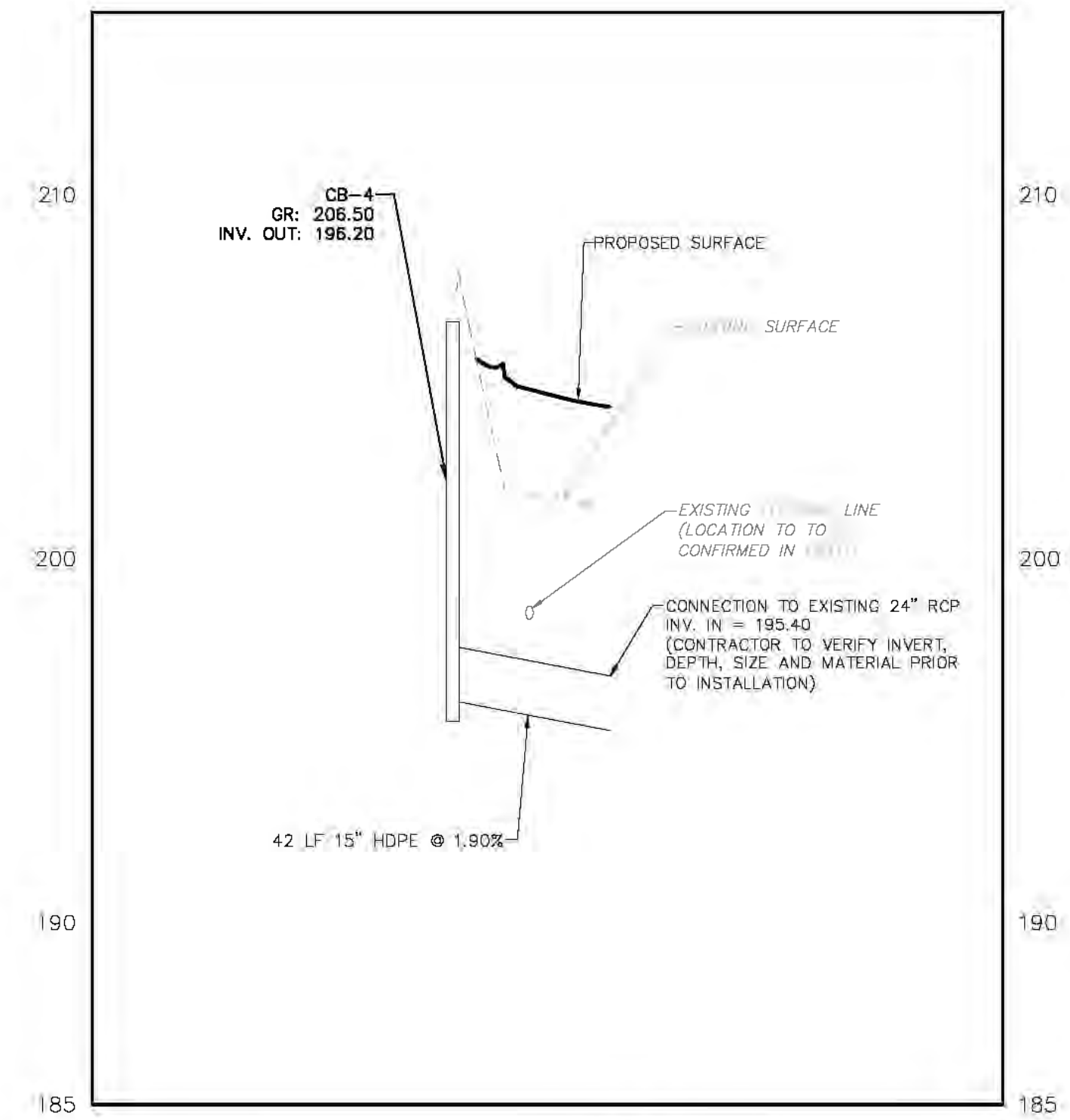


Date	Description	No.
Revisions		
BRIAN M. CONLON PROFESSIONAL ENGINEER PA Lic. No. PE061782		
Langan Engineering and Environmental Services, Inc. 1818 Market Street, Suite 3300 Philadelphia, PA 19103 T: 215.845.8900 F: 215.845.8901 www.langan.com		
Project <b>NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS</b> ABBINGTON TOWNSHIP MONTGOMERY COUNTY PENNSYLVANIA		
Drawing Title <b>DRAINAGE PLAN</b>		
Project No.	220154401	<b>CG-102</b>
Date	12 AUGUST 2025	
Drawn By	TFH/AEB	
Checked By	BMC	
Sheet 9 of 18		

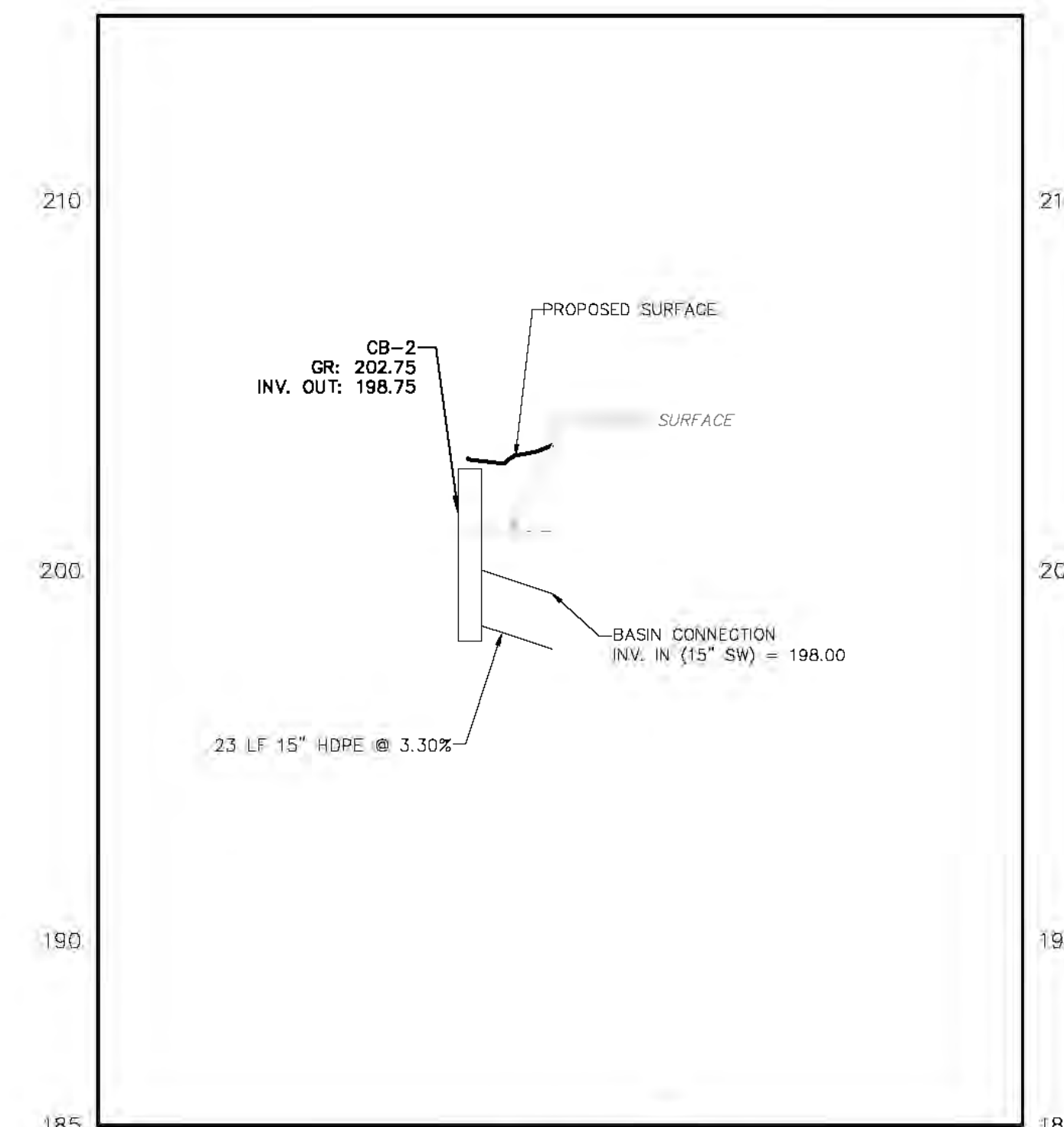




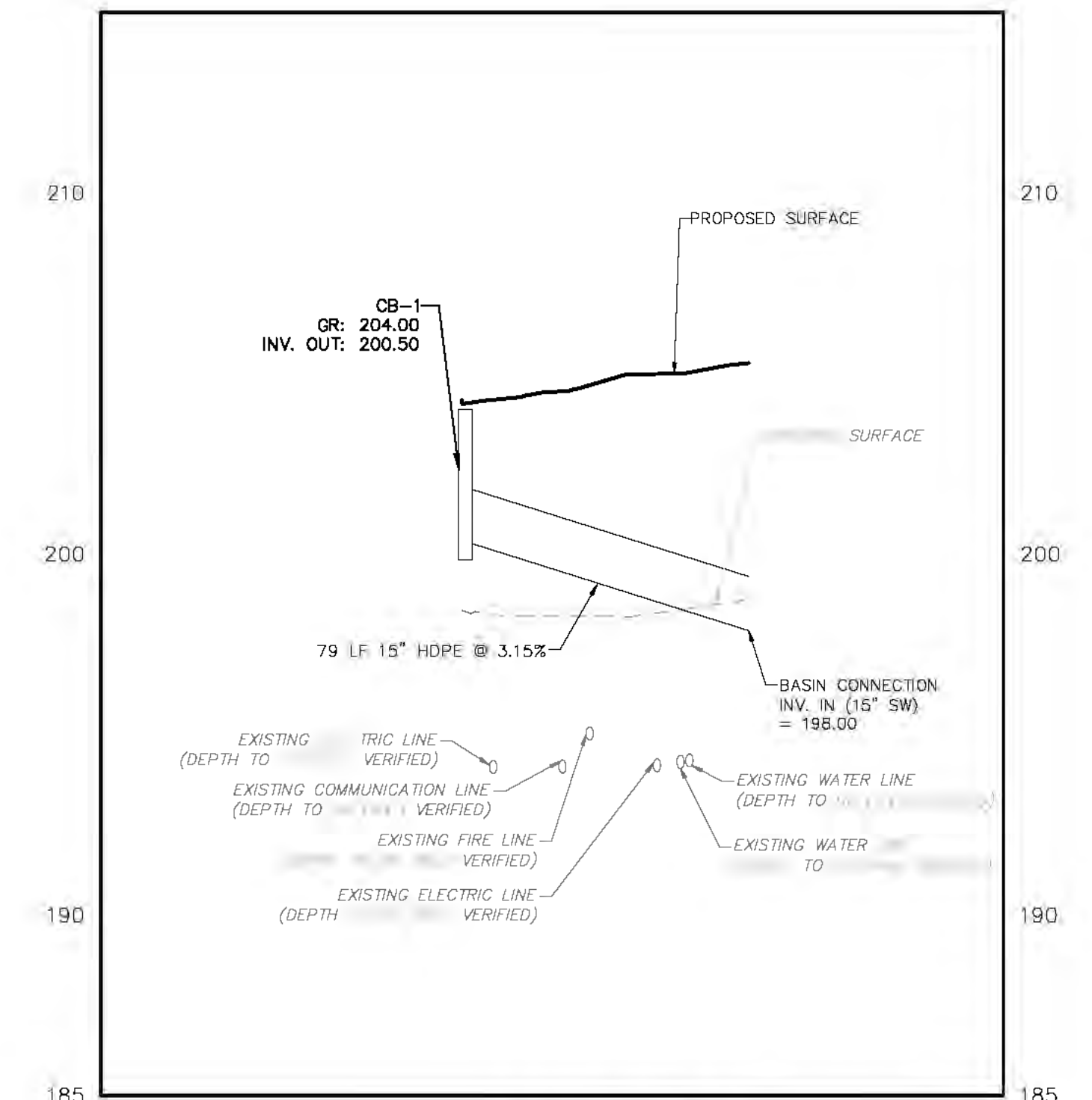
CB-3 TO EXISTING MANHOLE PROFILE



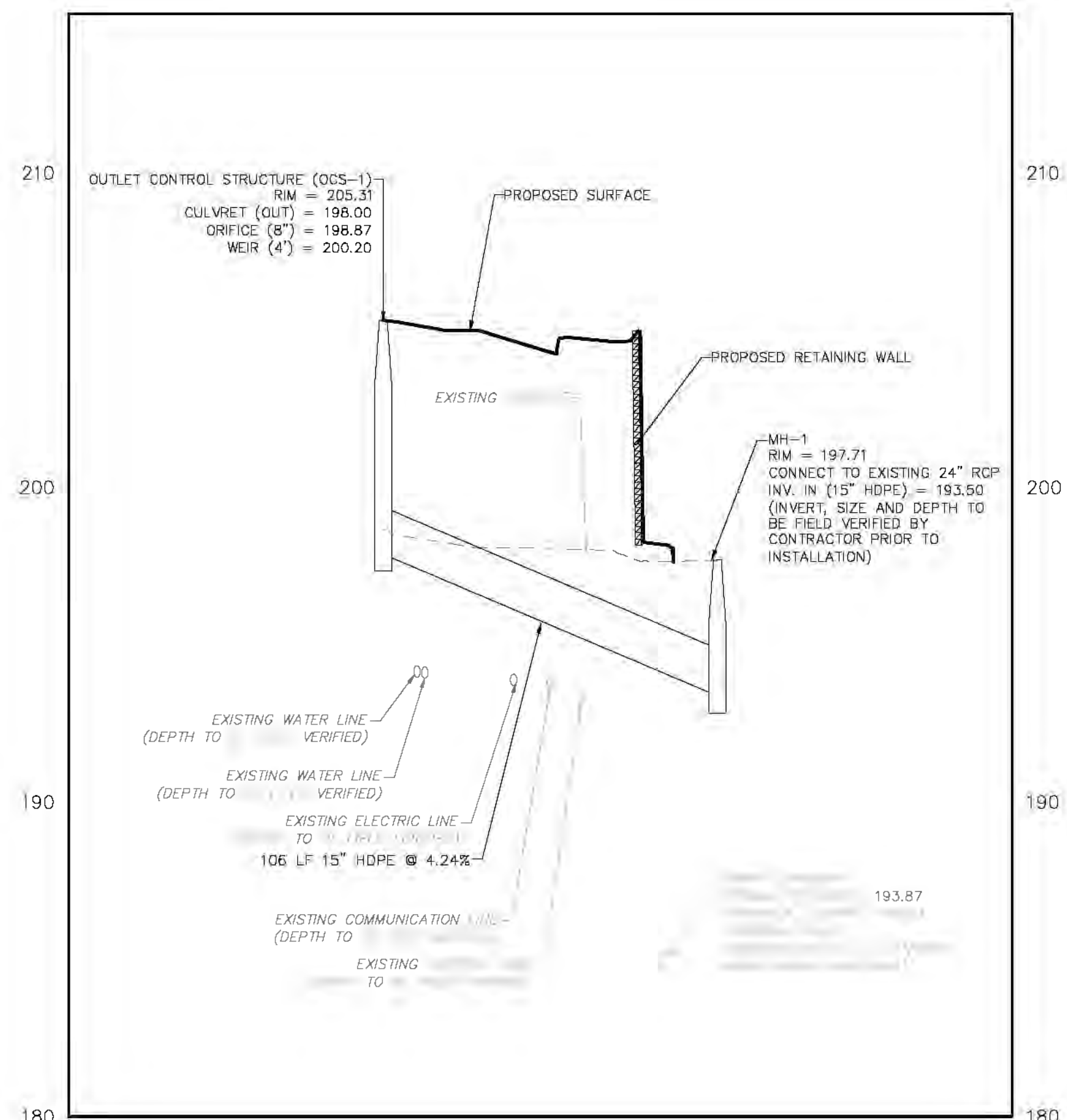
CB-4 TO EXISTING PIPE PROFILE



CB-2 TO BASIN PROFILE



CB-1 TO BASIN PROFILE



OCS-1 TO MH-1 PROFILE

Date	Description	No.
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Revisions



BRIAN M. CONLON  
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Project  
**NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS**  
ABINGTON TOWNSHIP  
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title  
**STORM SEWER PROFILES**

Project No. <b>220154401</b>	<b>CG-201</b>
Date <b>12 AUGUST 2025</b>	
Drawn By <b>TFH/AEB</b>	
Checked By <b>BMC</b>	

**GENERAL NOTES:**

- MATERIALS: UNLESS OTHERWISE SPECIFIED ON THE PLANS OR HEREIN, CORRUGATED POLYETHYLENE PIPE SHALL CONFORM TO ASTM M-294, LATEST EDITION, STANDARD SPECIFICATION FOR CORRUGATED POLYETHYLENE PIPE.
- RESINS: CORRUGATED POLYETHYLENE PIPE SHALL BE MANUFACTURED FROM HIGH DENSITY POLYETHYLENE VIRIDON COMPOUNDS, AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3350 FOR THE CELL CLASSIFICATION 335400C.
- COUPLING BANDS: EXCEPT AS OTHERWISE REQUIRED HEREIN, COUPLING BANDS AND OTHER HARDWARE FOR CORRUGATED POLYETHYLENE PIPE SHALL DEMONSTRATE THAT THEY MEET THE SOIL TIGHTNESS REQUIREMENTS OF ASHTO SECTION 26 "STANDARD" SPECIFICATIONS FOR HIGHWAY BRIDGES.

COUPLING BANDS SHALL LAP EQUALLY ON EACH OF THE PIPES BEING CONNECTED TO FORM A TIGHTLY CLOSED JOINT AFTER INSTALLATION.

THE CORRUGATIONS IN THE BAND SHALL INDEX THE CORRUGATIONS IN THE PIPE ENDS TO ENGAGE AT LEAST TWO FULL CORRUGATIONS FROM THE END OF EACH PIPE. WHEN INFILTRATION OR EXFILTRATION IS A CONCERN, THE COUPLING BANDS MAY BE REQUIRED TO HAVE GASKETS. THE GASKET MATERIAL SHALL BE CLOSED-CELL EXPANDED RUBBER OR NEOPRENE.

OTHER COUPLINGS MAY BE BELL & SPIGOT AND CONFORM TO THE REQUIREMENTS OF ASHTO M294.

- DESIGNATION OF TYPE: THE PIPE MAY BE ONE OR BOTH OF THE FOLLOWING TYPE:
  - TYPE S: THIS PIPE WILL HAVE A FULL CIRCULAR CROSS-SECTION, WITH AN OUTER CORRUGATED PIPE WALL AND A SMOOTH INNER LINER.
  - TYPE D: THIS PIPE SHALL CONSIST OF AN ESSENTIALLY SMOOTH WATERWAY BRACED CIRCUMFERENTIALLY WITH RIGID RIBS WHICH ARE FORMED SIMULTANEOUSLY WITH A SMOOTH OUTER WALL.
- INSTALLATION: CORRUGATED POLYETHYLENE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH TABLE AND ASTM D-2321, LATEST EDITION, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS."

**CLASSES OF EMBEDMENT AND BACKFILL MATERIALS**

CLASS	TYPE	SOIL GROUP SYMBOL, D 2487	DESCRIPTION	PERCENTAGE PASSING SIEVE SIZES
				1/2 IN. (40 MM) NO. 4 (4.75 MM)
IA	MANUFACTURED AGGREGATES OPEN-GRADED, CLEAN	NONE	ANGULAR, CRUSHED STONE OR ROCK, CRUSHED GRAVEL, BROKEN COAL, CRUSHED SLAG, CONCRETE OR SHELLS, LARGE VOID CONTENT, CONTAIN LITTLE OR NO FINES.	100% ≤ 10% ≤ 5%
IB	MANUFACTURED, PROCESSED AGGREGATES, DENSE-GRADED, CLEAN	NONE	ANGULAR, CRUSHED STONE (OR OTHER CLASS A MATERIALS) AND STONE/SAND MIXTURES WITH GRANULATIONS SELECTED TO MINIMIZE MIGRATION OF ADJACENT SOILS; CONTAIN LITTLE OR NO FINES (SEE X1.3).	100% ≤ 5% ≤ 5%
II	COARSE-GRAINED SOILS, CLEAN	GW	WELL-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES.	100% ≤ 5% ≤ 5%
		GP	POORLY-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES.	> 5% OF "COARSE FRACTION"
		SW	WELL-GRADED SANDS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES.	> 5% OF "COARSE FRACTION"
		SP	POORLY-GRADED SANDS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES.	> 5% OF "COARSE FRACTION"
		EQ, GW-GC, GP-SM	SANDS AND GRAVELS WHICH ARE BORDERLINE BETWEEN CLEAN AND WITH FINES.	100% VARIES 5% TO 12%
III	COARSE-GRAINED SOILS WITH FINES	GC	CLAYEY GRAVELS, GRAVEL-SAND MIXTURES.	< 5% OF "COARSE FRACTION" 12% TO 30%
		SC	SILTY SANDS, SAND-SILT MIXTURES.	< 5% OF "COARSE FRACTION"
		SM	SILTY SANDS, SAND-CLAY MIXTURES.	< 5% OF "COARSE FRACTION"

**RECOMMENDATIONS FOR INSTALLATION AND USE OF SOILS AND AGGREGATES FOR FOUNDATION, EMBEDMENT AND BACKFILL**

SOIL CLASS	CLASS I	CLASS II	CLASS III	CLASS IV	
FOUNDATION	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED AND UNDESIRABLE TRENCH BOTTOM AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS.	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED AND UNDESIRABLE TRENCH BOTTOM AS RESTRICTED ABOVE. DO NOT USE IN THICKNESS GREATER THAN 12 IN. TOTAL. SHALL AND COMPACT IN 6-IN. MAXIMUM LAYERS.	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED AND UNDESIRABLE TRENCH BOTTOM AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS. LEVEL FINAL GRADE BY HAND. MINIMUM DEPTH 4 IN. (5 IN. IN ROCK CUTS).	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED AND UNDESIRABLE TRENCH BOTTOM AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS. LEVEL FINAL GRADE BY HAND. MINIMUM DEPTH 4 IN. (5 IN. IN ROCK CUTS).	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED AND UNDESIRABLE TRENCH BOTTOM AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS. LEVEL FINAL GRADE BY HAND. MINIMUM DEPTH 4 IN. (5 IN. IN ROCK CUTS).
EMBEDMENT	FACE AND WORK BY HAND TO INSURE ALL EXCAVATED VOIDS AND HUNCH ARE FILLED FOR HIGH DENSITIES USE VIBRATORY COMPACTORS.	MINIMUM DENSITY 90% ± STD. PROCTOR USE HAND TAMPERS OR VIBRATORY COMPACTORS.	MINIMUM DENSITY 90% ± STD. PROCTOR USE HAND TAMPERS OR VIBRATORY COMPACTORS.	MINIMUM DENSITY 90% ± STD. PROCTOR USE HAND TAMPERS OR VIBRATORY COMPACTORS.	MINIMUM DENSITY 90% ± STD. PROCTOR USE HAND TAMPERS OR VIBRATORY COMPACTORS.

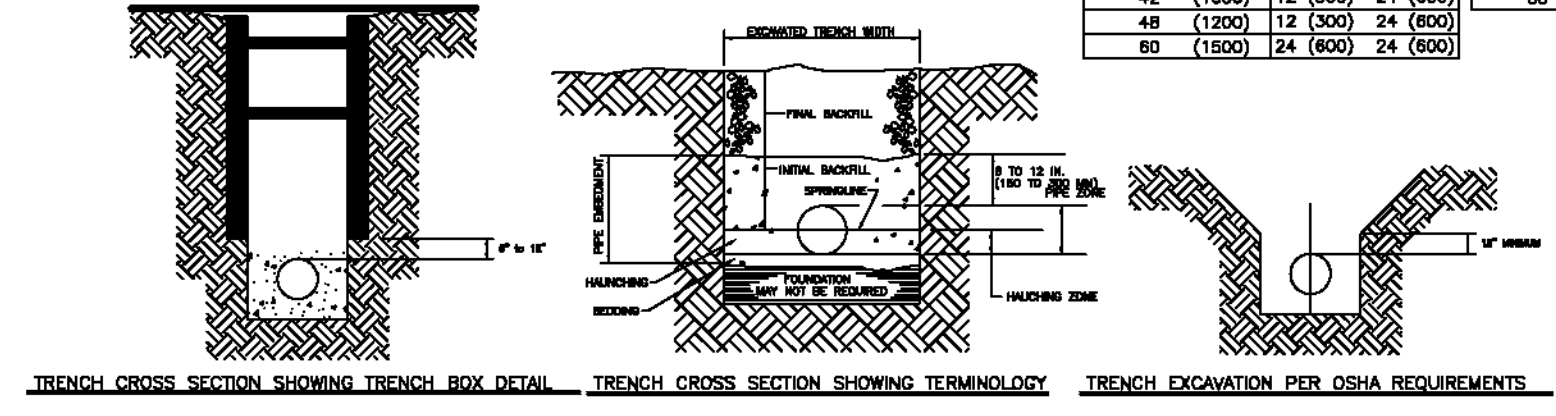
**HIGH DENSITY CORRUGATED POLYETHYLENE PIPE**

**NOMINAL DIAMETER**

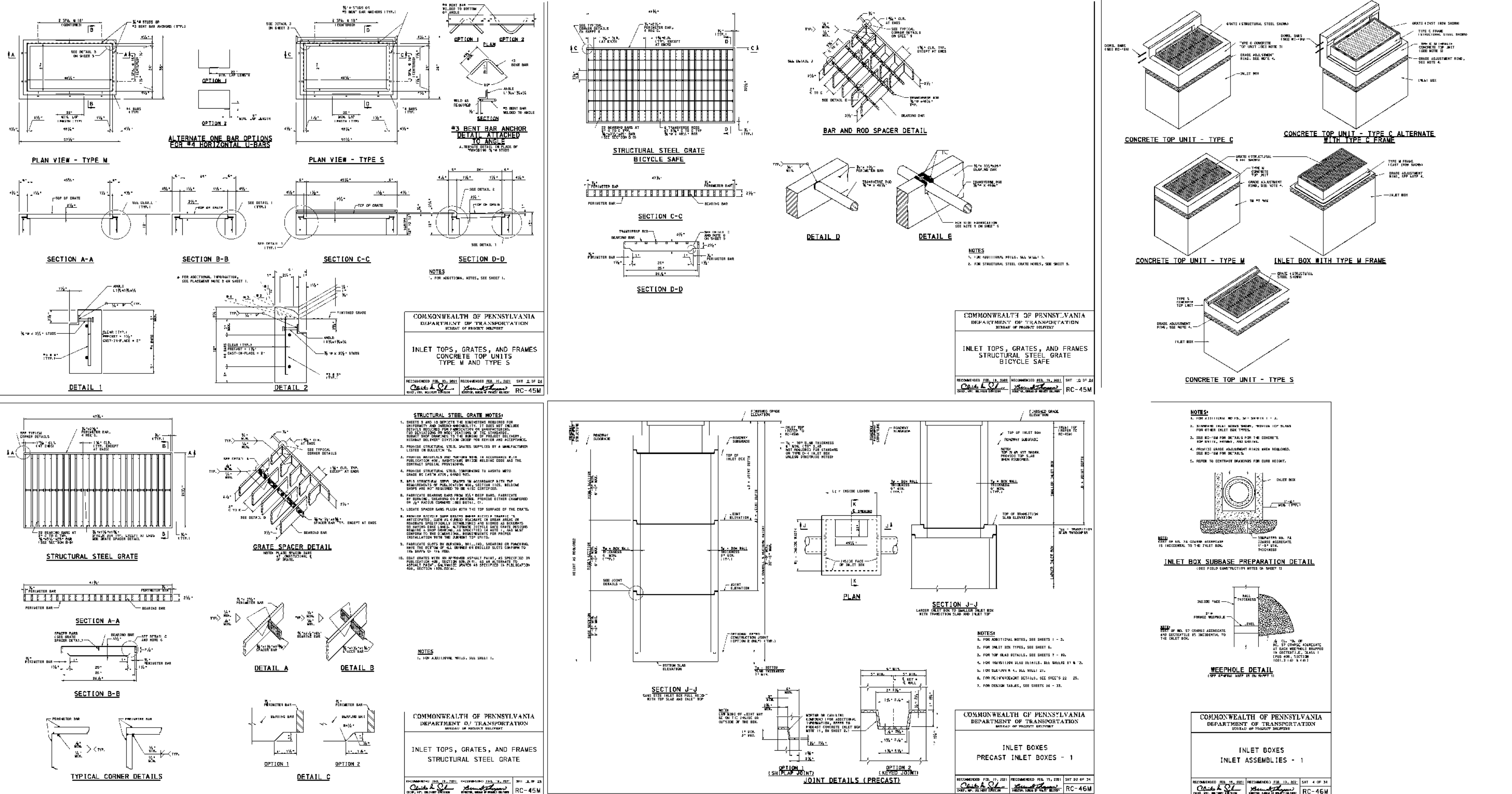
NOMINAL DIAMETER	NO. OF RINGS	MINIMUM COVER
12 (300)	12 (300)	24 (600)
15 (375)	12 (300)	24 (600)
18 (450)	12 (300)	24 (600)
24 (600)	12 (300)	24 (600)
30 (750)	12 (300)	24 (600)
36 (900)	12 (300)	24 (600)
42 (1050)	12 (300)	24 (600)
48 (1200)	12 (300)	24 (600)
60 (1500)	24 (600)	24 (600)

**DIAMETER OF PIPE CLEARANCES BETWEEN PIPES**

DIAMETER	O.D.	TRENCH WIDTH
12	14.45"	31"
15	17.65"	34"
18	21.10"	39"
24	28.50"	48"
30	36.10"	60"
36	42.25"	78"
42	47.60"	85"
48	53.00"	89"
60	66.30"	102"

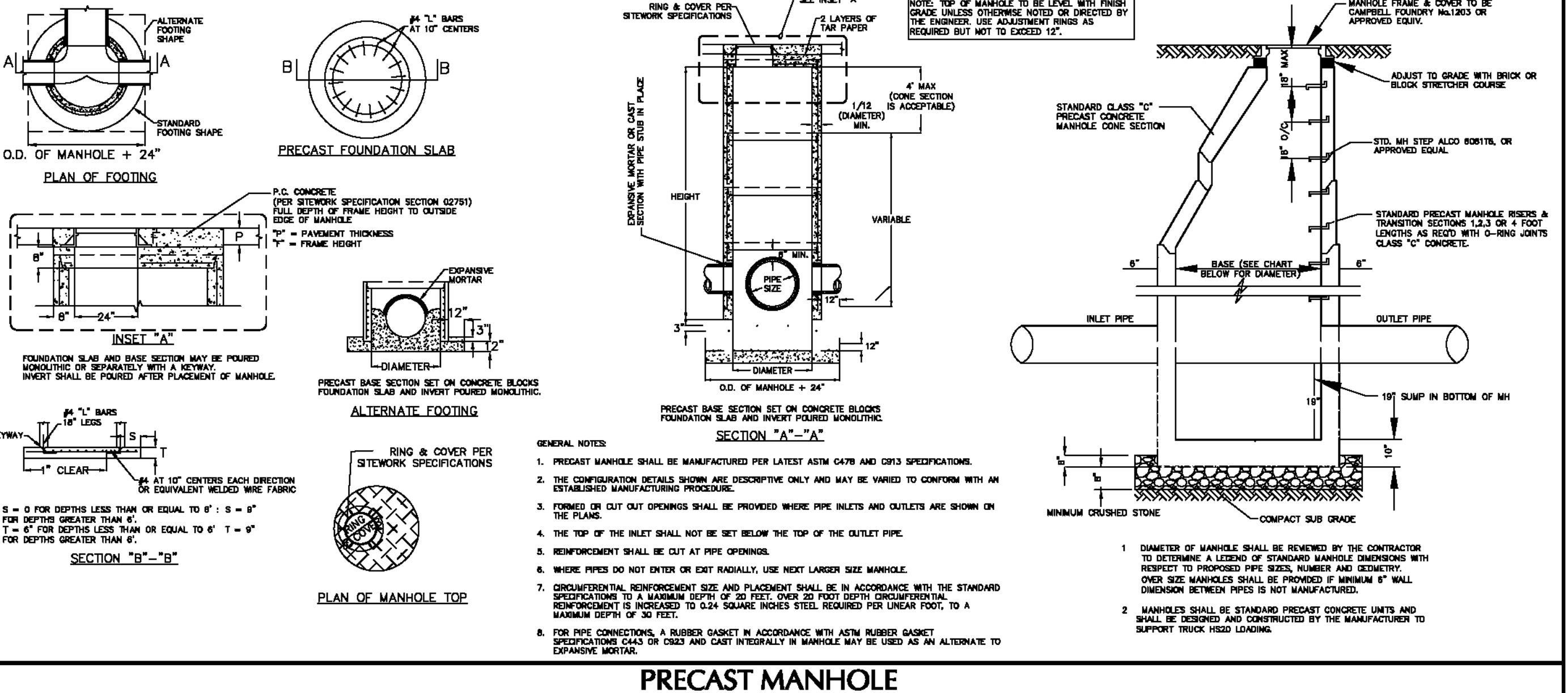


**HDPE PIPE**

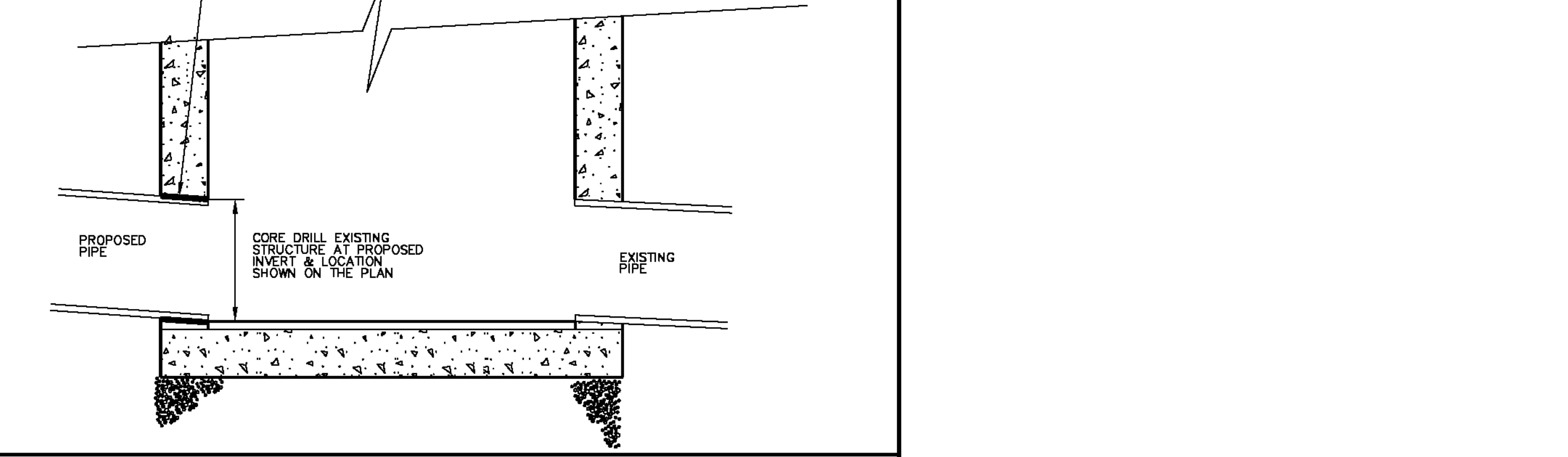


**PENNDOT INLET**

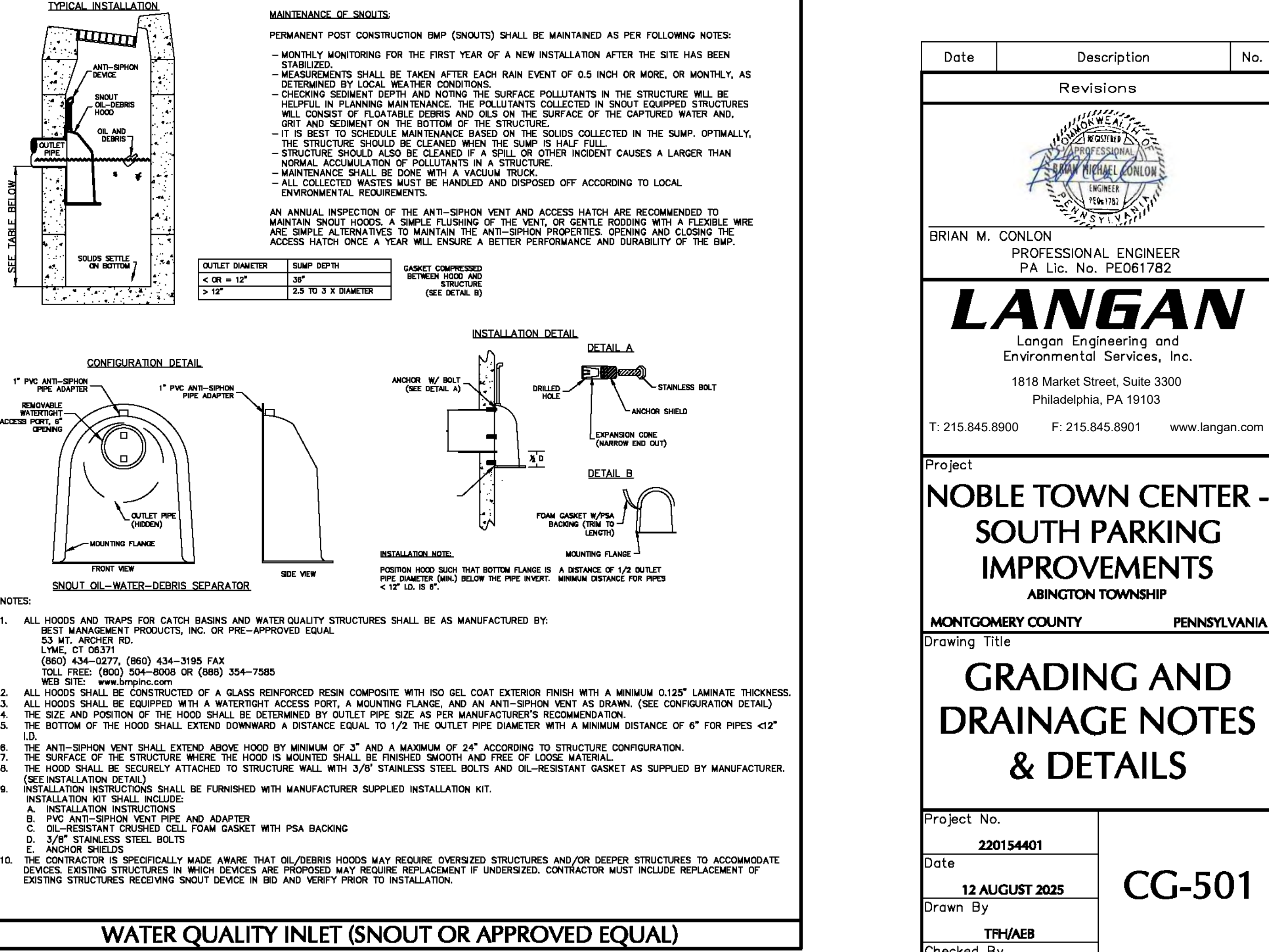
STRUCTURES SHOWN ON THESE DRAWINGS INCLUDING BUT NOT LIMITED DRAINAGE STRUCTURES (INLETS, CATCH BASIN AND MANHOLES), SANITARY MANHOLES, METER PITS AND UNDERGROUND VAULTS ARE NOT STRUCTURALLY DESIGNED. THE DETAILS PROVIDE TYPICAL DIMENSIONS, LOCATION OF PIPE PENETRATIONS, PIPE INVERTS AND GROUND ELEVATIONS AT THE STRUCTURE RIM OR GRATE ONLY. THE STRUCTURAL DESIGN INCLUDING WALL AND SLAB THICKNESS AS WELL AS REINFORCING SHALL BE THE RESPONSIBILITY OF THE PRECAST MANUFACTURER TO MEET STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND HS-20 OR HS-25 LOADING REQUIREMENTS WHEN POSITIONING TRAVELED WAYS. STRUCTURAL DESIGN (WALL AND SLAB THICKNESS AND ALL REINFORCING), WHERE THE UNIT IS WITHIN THE TRAVELED WAY, SHALL BE BY PRECASTER AND SHALL MEET STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND SUPPORT HS-20 OR HS-25 LOADING AS REQUIRED.



**CONNECTION TO EXISTING STORM STRUCTURE**



**WATER QUALITY INLET (SNOOT OR APPROVED EQUAL)**



Date Description No.

Revisions

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Project  
**NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS**  
ABINGTON TOWNSHIP

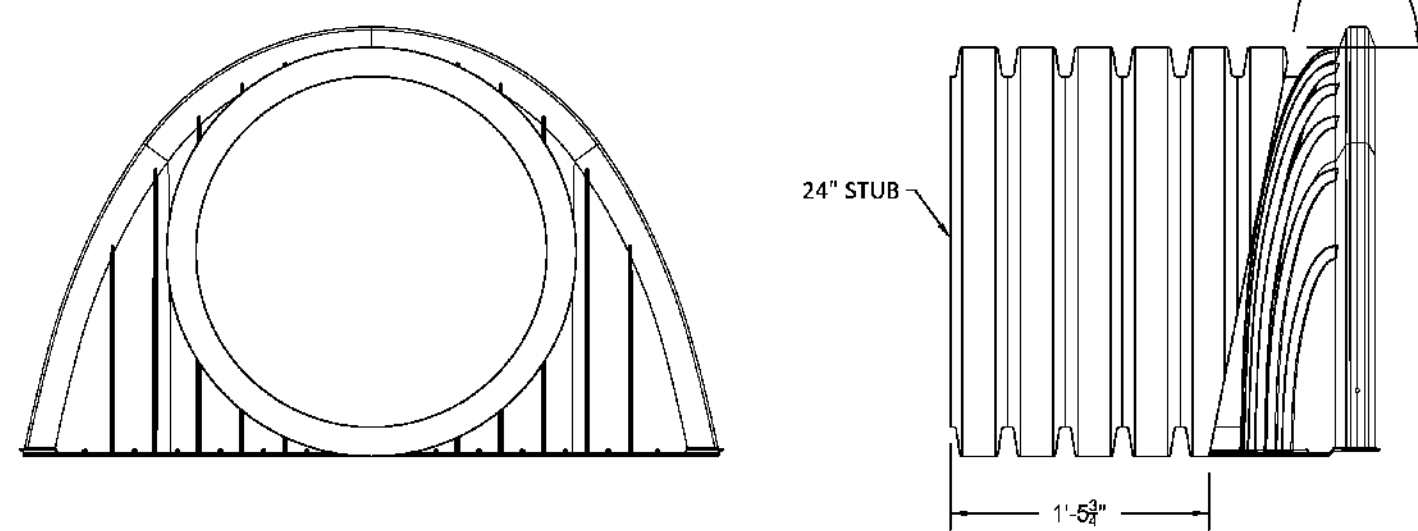
MONTGOMERY COUNTY PENNSYLVANIA  
Drawing Title

**GRADING AND DRAINAGE NOTES & DETAILS**

Project No. 220154401  
Date 12 AUGUST 2025  
Drawn By TRH/AEB  
Checked By BMC  
Sheet 11 of 18

CG-501





NOBLE TOWN CENTER REDEV. - SOUTH PARKING  
MONTGOMERY CO., PA  
LYONS & HOHL  
SK75 STORMKEEPER SYSTEM  
LANE ENTERPRISES, INC.

PROJECT: N.T.S.  
DATE: 07-22-2025  
C2807REV1



NOBLE TOWN CENTER REDEV. - SOUTH PARKING  
MONTGOMERY CO., PA  
LYONS & HOHL  
SK75 STORMKEEPER SYSTEM  
LANE ENTERPRISES, INC.

PROJECT: N.T.S.  
DATE: 07-22-2025  
C2807REV1

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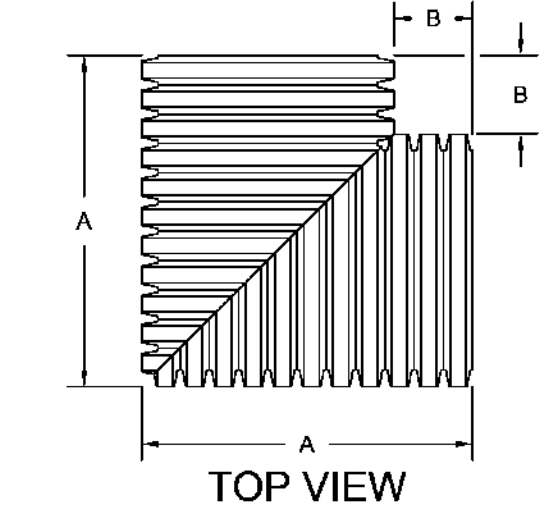
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PIPE SIZE	PART #	A	B
4"	HDFT04EL90/S	6.25"	1.50"
6"	HDFT06EL90/S	10.50"	3.50"
8"	HDFT08EL90/S	12.50"	3.00"
10"	HDFT10EL90/S	15.25"	3.25"
12"	HDFT12EL90/S	19.00"	4.50"
15"	HDFT15EL90/S	24.25"	6.75"
18"	HDFT18EL90/S	28.50"	7.00"
24"	HDFT24EL90/S	37.75"	9.75"
30"	HDFT30EL90/S	45.25"	10.75"
36"	HDFT36EL90/S	52.50"	11.50"
42"	HDFT42EL90/S	61.00"	13.50"
48"	HDFT48EL90/S	64.50"	10.00"
60"	HDFT60EL90/S	78.25"	11.75"



NOBLE TOWN CENTER REDEV. - SOUTH PARKING  
MONTGOMERY CO., PA  
LYONS & HOHL  
SK75 STORMKEEPER SYSTEM  
LANE ENTERPRISES, INC.

PROJECT: N.T.S.  
DATE: 07-22-2025  
C2807REV1



NOBLE TOWN CENTER REDEV. - SOUTH PARKING  
MONTGOMERY CO., PA  
LYONS & HOHL  
SK75 STORMKEEPER SYSTEM  
LANE ENTERPRISES, INC.

PROJECT: N.T.S.  
DATE: 07-22-2025  
C2807REV1

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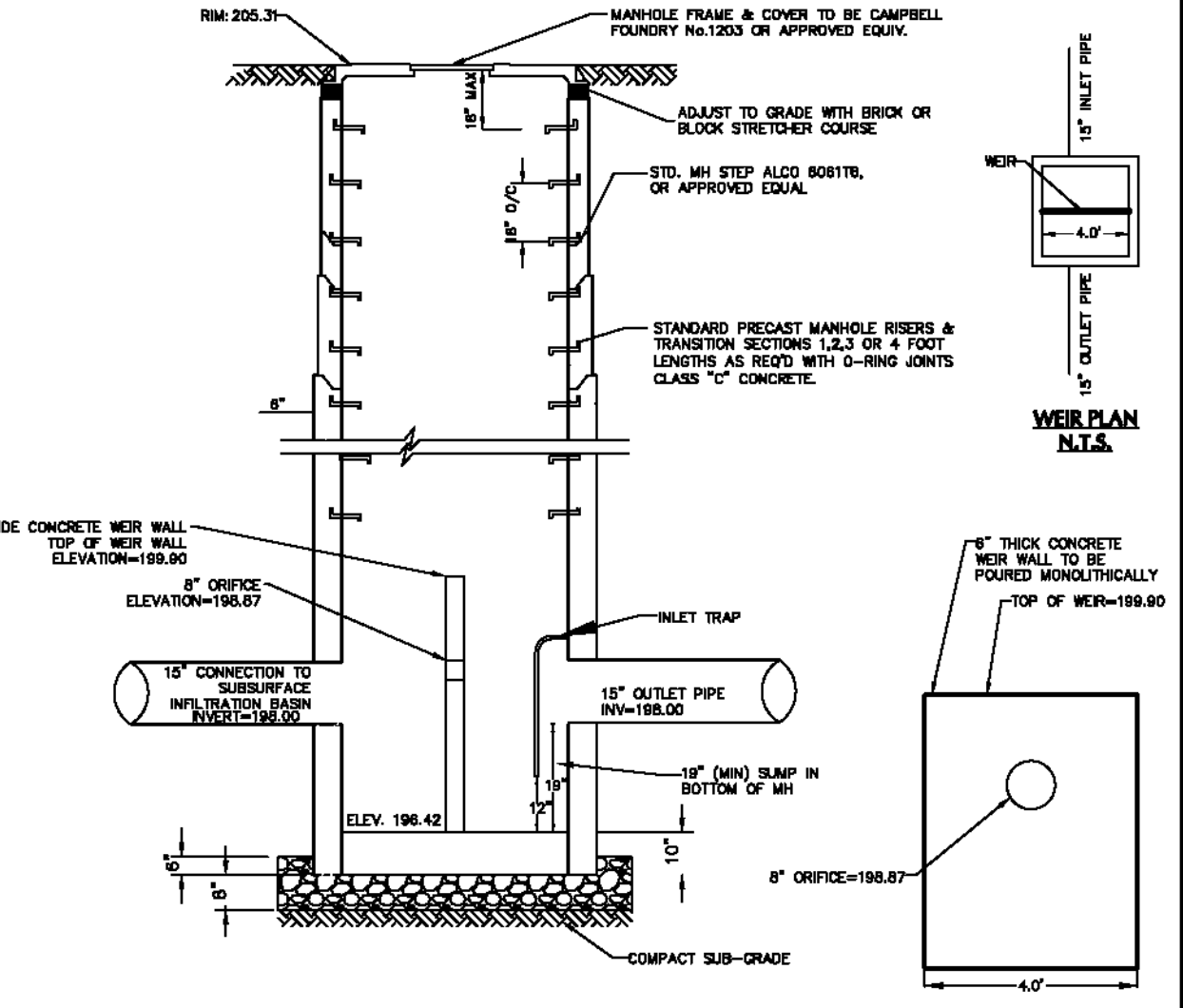
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DATE: \_\_\_\_\_  
NOT FOR CONSTRUCTION



DETAIL FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO PROVIDE STRUCTURAL DESIGN AND DETAIL TO ENGINEER FOR REVIEW.

OUTLET CONTROL STRUCTURE



NOBLE TOWN CENTER REDEV. - SOUTH PARKING  
MONTGOMERY CO., PA  
LYONS & HOHL  
SK75 STORMKEEPER SYSTEM  
LANE ENTERPRISES, INC.

PROJECT: N.T.S.  
DATE: 07-22-2025  
C2807REV1

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DATE: \_\_\_\_\_  
NOT FOR CONSTRUCTION

PIPE SIZE	PART #	A	B	C
4"	HDFT04T/S	7.75"	4.00"	1.50"
6"	HDFT06T/S	14.00"	7.00"	3.50"
8"	HDFT08T/S	15.50"	7.75"	3.00"
10"	HDFT10T/S	18.50"	9.25"	3.25"
12"	HDFT12T/S	23.50"	11.75"	4.50"
15"	HDFT15T/S	31.00"	15.50"	6.75"
18"	HDFT18T/S	35.50"	17.75"	7.00"
24"	HDFT24T/S	47.25"	23.50"	9.75"
30"	HDFT30T/S	56.00"	28.00"	10.75"
36"	HDFT36T/S	64.00"	32.00"	11.50"
42"	HDFT42T/S	74.75"	37.25"	13.50"
48"	HDFT48T/S	74.75"	37.25"	10.00"
60"	HDFT60T/S	90.00"	45.00"	11.75"

PIPE SIZE	PART #	A	B	C
4"	HDFT04CT/S	7.75"	4.00"	1.50"
6"	HDFT06CT/S	14.00"	7.00"	3.50"
8"	HDFT08CT/S	15.50"	7.75"	3.00"
10"	HDFT10CT/S	18.50"	9.25"	3.25"
12"	HDFT12CT/S	23.50"	11.75"	4.50"
15"	HDFT15CT/S	31.00"	15.50"	6.75"
18"	HDFT18CT/S	35.50"	17.75"	7.00"
24"	HDFT24CT/S	47.25"	23.50"	9.75"
30"	HDFT30CT/S	56.00"	28.00"	10.75"
36"	HDFT36CT/S	64.00"	32.00"	11.50"
42"	HDFT42CT/S	74.75"	37.25"	13.50"
48"	HDFT48CT/S	74.75"	37.25"	10.00"

NOTE: ALL FITTING DIMENSIONS ARE FOR REFERENCE ONLY.

NOTES:  
1. ALL 24" PP FITTINGS ARE SOLID PIPE.  
2. ALL GEOMETRIC TOLERANCES IN ACCORDANCE WITH AASHTO SPECIFICATIONS.  
3. ALL PP MATERIALS IN ACCORDANCE WITH AASHTO M250.  
4. ALL DIMENSIONS ARE NOMINAL, UNLESS OTHERWISE NOTED.  
5. ALL CUT LENGTHS SHOULD BE FIELD VERIFIED FOR LENGTH.

NOTE: ALL FITTING DIMENSIONS ARE FOR REFERENCE ONLY.

NOTES:  
1. ALL 15" HDPE FITTINGS ARE SOLID PIPE.  
2. ALL GEOMETRIC TOLERANCES IN ACCORDANCE WITH AASHTO SPECIFICATIONS.  
3. ALL HDPE MATERIALS IN ACCORDANCE WITH AASHTO M250.  
4. ALL DIMENSIONS ARE NOMINAL, UNLESS OTHERWISE NOTED.  
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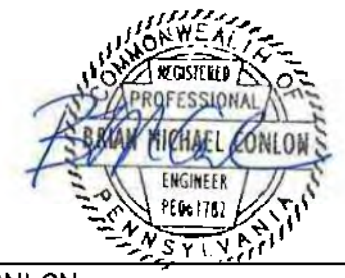
NOTES:  
1. ALL 15" HDPE FITTINGS ARE SOLID PIPE.  
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3. ALL HDPE MATERIALS IN ACCORDANCE WITH AASHTO M250.  
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NOTES:  
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4. ALL DIMENSIONS ARE NOMINAL, UNLESS OTHERWISE NOTED.  
5. ALL CUT LENGTHS SHOULD BE FIELD VERIFIED FOR LENGTH.

STORMKEEPER SYSTEM - SUBSURFACE STORMWATER MANAGEMENT SYSTEM

Date	Description	No.
Revisions		



BRIAN M. CONLON  
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Project  
**NOBLE TOWN CENTER -  
SOUTH PARKING  
IMPROVEMENTS**  
ABINGTON TOWNSHIP  
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title  
**GRADING AND  
DRAINAGE NOTES  
& DETAILS III**

Project No. <b>220154401</b>	<b>CG-503</b>
Date <b>12 AUGUST 2025</b>	
Drawn By <b>TFH/AEB</b>	
Checked By <b>BMC</b>	

GENERAL E&S NOTES

- 1. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES...
2. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION...
3. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG OR EQUIVALENT SEDIMENT REMOVAL FACILITY...
4. FAILURE TO CORRECTLY INSTALL E&S BMPs, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE EARTH DISTURBANCE ACTIVITY...
5. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 2803 ET SEQ., 2711, AND 2871 ET SEQ...
6. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF ANY EXCESS MATERIAL AND MAKE SURE THE SITE/RECEIVING THE EXCESS HAS AN APPROVED AND FULLY IMPLEMENTED EROSION AND SEDIMENT CONTROL PLAN THAT MEETS THE CONDITIONS OF CHAPTER 102 AND/OR OTHER STATE OR FEDERAL REGULATIONS...
7. CLEAN FILL IS DEFINED AS UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL...
8. ANY PLACEMENT OF CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM PP-001 TO CERTIFY THE ORIGINAL OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIAL AS CLEAN FILL...
9. ENVIRONMENTAL DUE DILIGENCE MUST BE PERFORMED TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL...
10. COPIES OF ALL DISPOSAL MANIFESTS ISSUED BY THE ACCEPTING LANDFILL FACILITY ADDRESSING THE FILL MATERIALS REMOVED FROM THE SITE SHALL BE SUBMITTED TO THE TOWNSHIP...
11. AFTER THE ENTIRE SITE IS STABILIZED, CONTRACTOR SHOULD ADJUST ALL GRADES, AND ALL PROPOSED AND EXISTING STORM DRAINAGE PIPES, TO MATCH WITH THOSE ON FINAL APPROVED SET OF PLANS (AS PER DRAWING CG-10)...
12. IN AREAS OF EXCAVATION, ALL EXISTING UTILITIES TO REMAIN SHALL BE CHECKED FOR PROPER COVER AS REQUIRED BY THE UTILITY OWNER... SHOULD MINIMUM COVER NOT EXIST, THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH SAID UTILITY COMPANY TO LOWER THE UTILITY TO PROVIDE PROPER COVER.

CONSTRUCTION SEQUENCE

- 1. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE...
2. AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING...
3. AT LEAST 3 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM...
4. MARK OUT THE LIMIT OF DISTURBANCE FOR CONSTRUCTION ACTIVITIES AS SHOWN ON DRAWINGS...
5. INSTALL TEMPORARY CONSTRUCTION FENCE AS SHOWN ON THIS SHEET AND AS DIRECTED BY THE CONSTRUCTION MANAGER AND/OR TOWNSHIP/COUNTY OFFICIALS...
6. INSTALL COMPOST FILTER SOCK AND INLET PROTECTION ON EXISTING INLETS AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH THE DETAIL ON DRAWING CE-501...
7. COORDINATE WITH SITE OWNER AND INSTALL TEMPORARY ON-SITE TRAFFIC SIGNAGE AND STRIPING WITHIN THE PARKING LOT TO MAINTAIN SAFE VEHICULAR CIRCULATION...
8. THE EXISTING PAVEMENT MAY BE USED FOR CONSTRUCTION ACCESS IN LIEU OF A ROCK CONSTRUCTION ENTRANCE...
9. INSTALL CONCRETE WASHOUT IN ACCORDANCE WITH THE DETAIL ON DRAWING CE-501...
10. PROTECT INFILTRATION BASIN AREA FROM COMPACTION PRIOR TO INSTALLATION...
11. REMOVE EXISTING FEATURES (CURBING, ASPHALT, SIDEWALK ETC.) TO LIMITS INDICATED ON DEMOLITION PLAN...
12. DEMOLISH THE EXISTING UTILITIES AND LIMITS INDICATED...
13. ROUGH GRADE SOIL IN PARKING AND DRIVEWAYS AREAS TO SUBGRADE ELEVATIONS...
14. INSTALL STORM DRAINAGE SYSTEMS AS SITE IS BROUGHT TO GRADE...
15. BEFORE DISPOSING OF SOIL OR RECEIVING BORROW FOR THE SITE, THE OPERATOR MUST ASSURE THAT EACH SPILL OR BORROW AREA HAS AN EROSION AND SEDIMENT CONTROL PLAN...
16. COMPLETE CONSTRUCTION OF THE STORM DRAINAGE SYSTEMS...
17. SWEEP THE PARKING LOTS AND FLUSH OR LET THE STORM SEWER CONVEYANCE SYSTEM PRIOR TO REMOVING ANY TEMPORARY SEDIMENT CONTROL MEASURES...
18. CONSTRUCT THE INFILTRATION BASIN DURING THE FINAL PHASE OF SITE CONSTRUCTION...
19. EXCAVATE AND PREPARE INFILTRATION BASIN BED...
20. EXCAVATE BOTTOM OF BASIN TO 0.5 FEET BELOW PROPOSED FINAL GRADE...
21. INSTALL SUITABLE PERMEABLE SOILS OVER BASIN BOTTOM TO FINAL GRADE...
22. INSTALL CONCRETE SIDEWALK, CONTINUE INSTALLATION OF UTILITIES INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, TELEPHONE, WATER, SANITARY SEWER AND REMAINING STORM DRAINAGE WITH INLET PROTECTION...
23. REFER TO DRAWINGS FOR SOIL EROSION AND SEDIMENT CONTROL MAINTENANCE PROGRAM...
24. INSTALL CONCRETE CURBING WITHIN PARKING AREAS AND DRIVEWAYS...
25. ONCE PERMANENT MEASURES HAVE BEEN INSTALLED, TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED...
26. INSTALL SIGNS AS SHOWN ON SITE CONSTRUCTION PLAN, DRAWING CG-101...
27. THE CONTRACTOR SHALL REMOVE, DISPOSE OR RECYCLE ALL CONSTRUCTION MATERIALS REMOVED FROM THE SITE...
28. PLACE WEARING COURSE FOR ALL AREAS THAT ARE COMPLETED, BEGIN STRIPING OF PARKING AREAS AND ACCESS DRIVES.

Table with columns: MAP SYMBOL, DESCRIPTION, SUBSYSTEM, LIMITATIONS, SUITABILITY AS SOURCE OF, ENGINEERING CHARACTERISTICS, CONSTRUCTION TECHNIQUES/SPECIAL CONSIDERATIONS. Rows include Ugb and Ugd symbols.

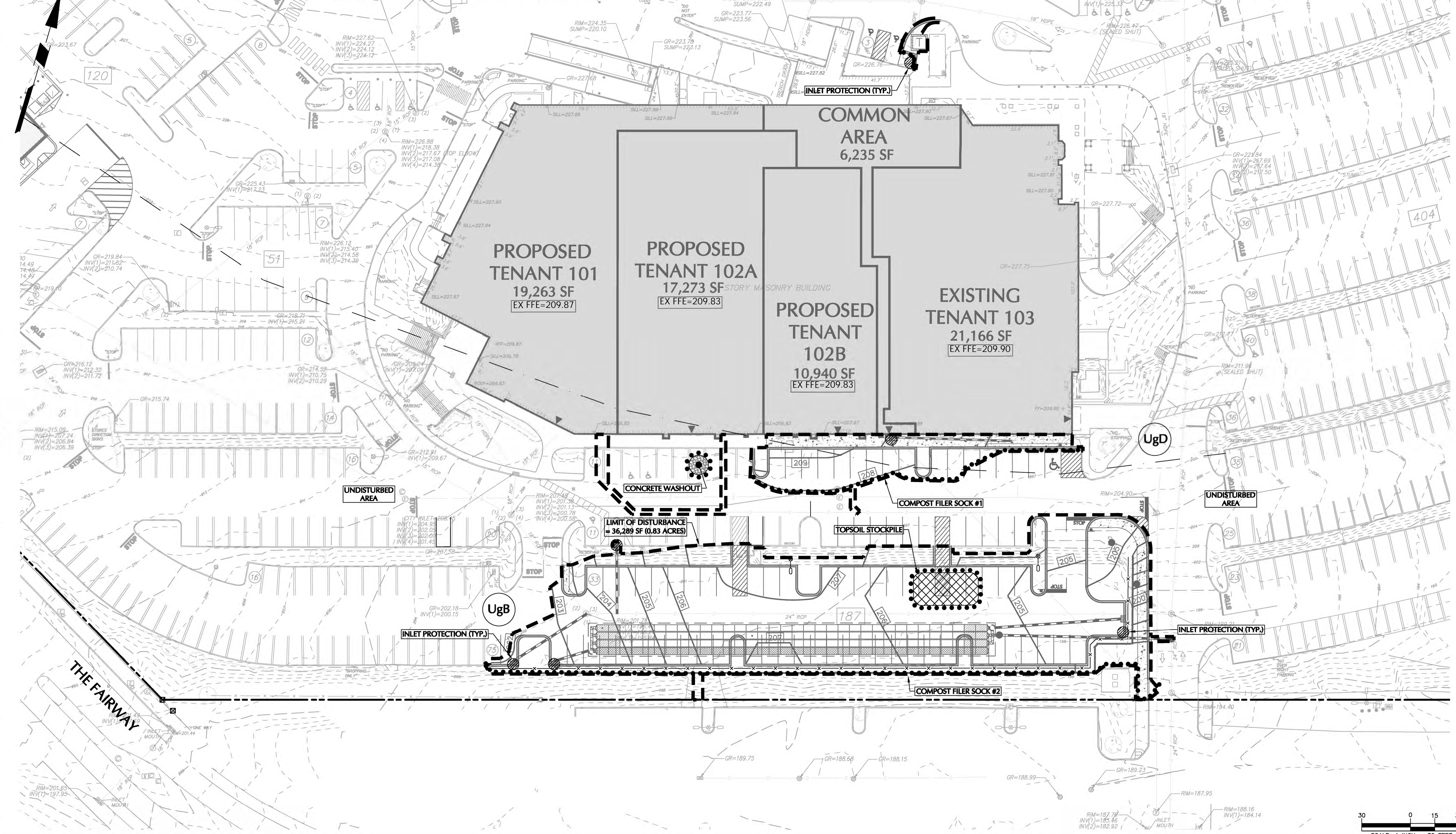
STABILIZATION SPECIFICATIONS

- 1. UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY...
2. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM PERMANENT VEGETATIVE COVER...
3. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN...
4. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES...
5. TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING...
6. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE THE DISTURBED AREAS...
7. AN EROSION CONTROL BLANKET WILL BE INSTALLED ON ALL DISTURBED SLOPES 3:1 OR STEEPER...

MAINTENANCE PROGRAM

- 1. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT CONTROL BMPs MUST BE MAINTAINED PROPERLY...
2. ANY SEDIMENT REMOVED FROM BMPs DURING CONSTRUCTION WILL BE RETURNED TO UPLAND AREAS ON SITE...
3. A LOG SHOWING THE DATES THAT E&S BMPs WERE INSPECTED AS WELL AS ANY CORRECTIONS FOUND AND THE DATE THAT THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE...

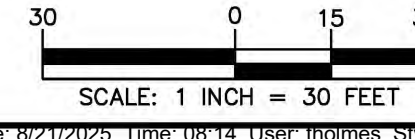
LEGEND section containing symbols for PROPERTY LINE, LIMIT OF DISTURBANCE, EXISTING WATER LINE, EXISTING SAN SEWER, EXISTING STORM SEWER, EXISTING ELECTRIC, EXISTING TELEPHONE, EXISTING GAS, EXISTING CONTOUR, PROPOSED CONTOUR, INLET PROTECTION, SOIL TYPE, SOIL BOUNDARY LINE, CONCRETE WASHOUT, PROPOSED STORM PIPE, PROPOSED STORM INLET.



Professional Engineer information for Brian M. Conlon, including a circular seal and contact details for Langan Engineering and Environmental Services, Inc.

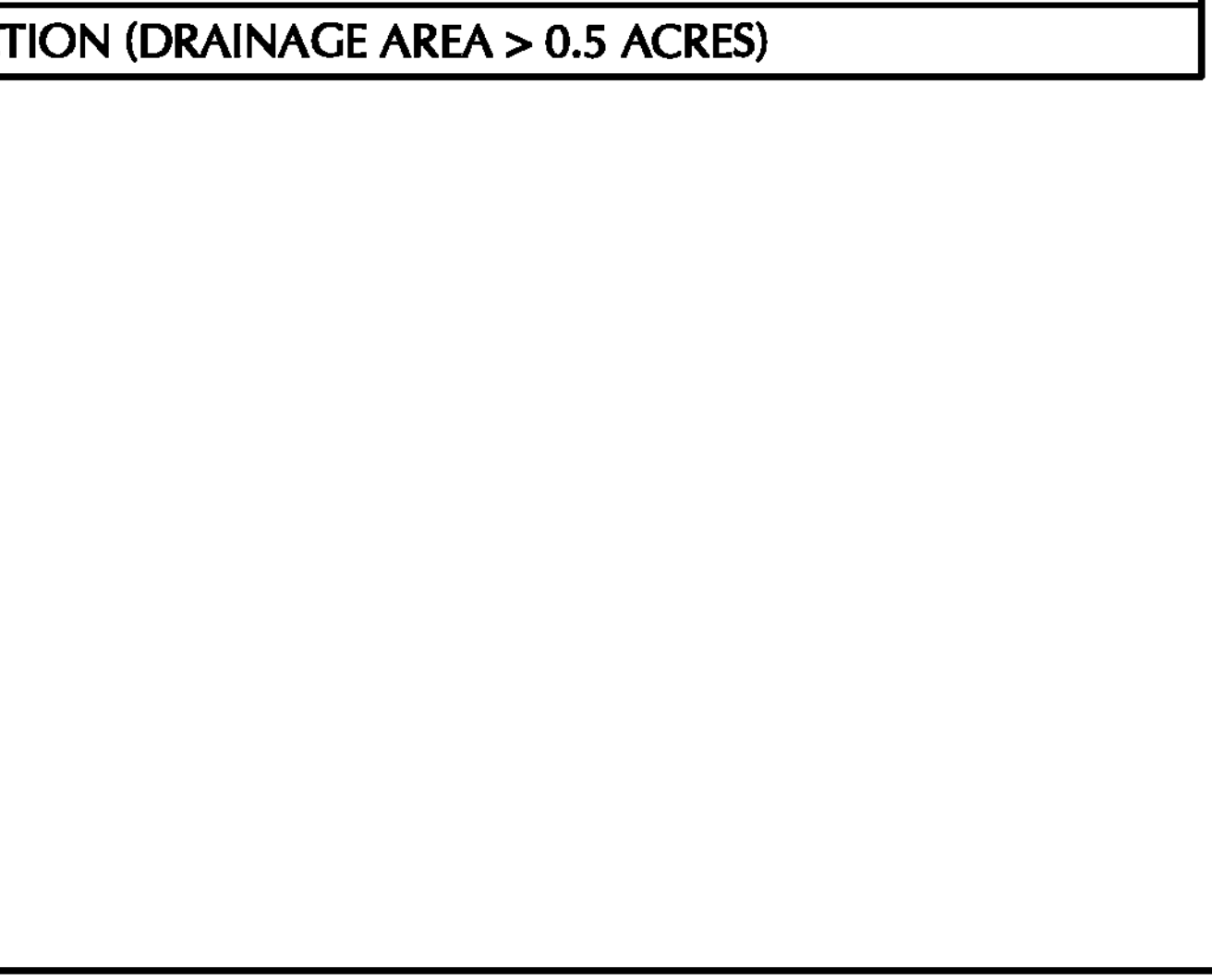
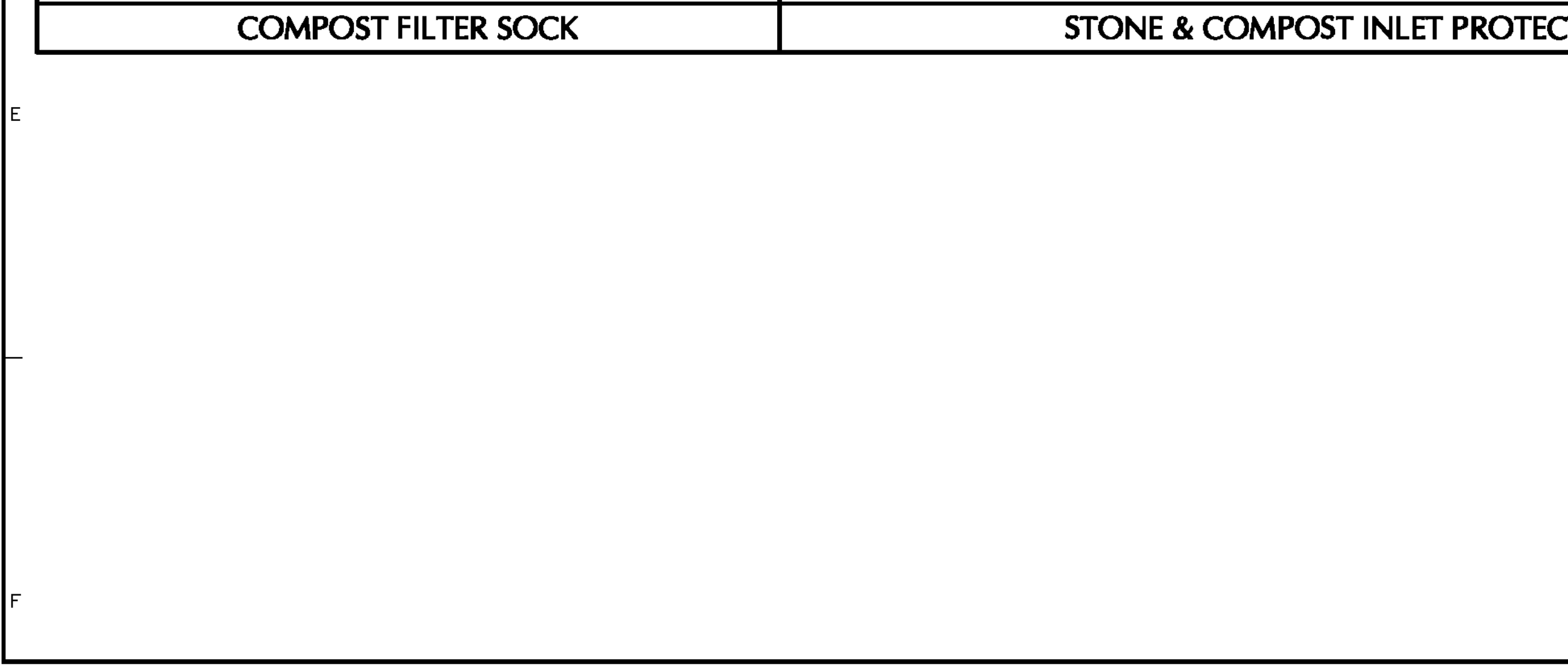
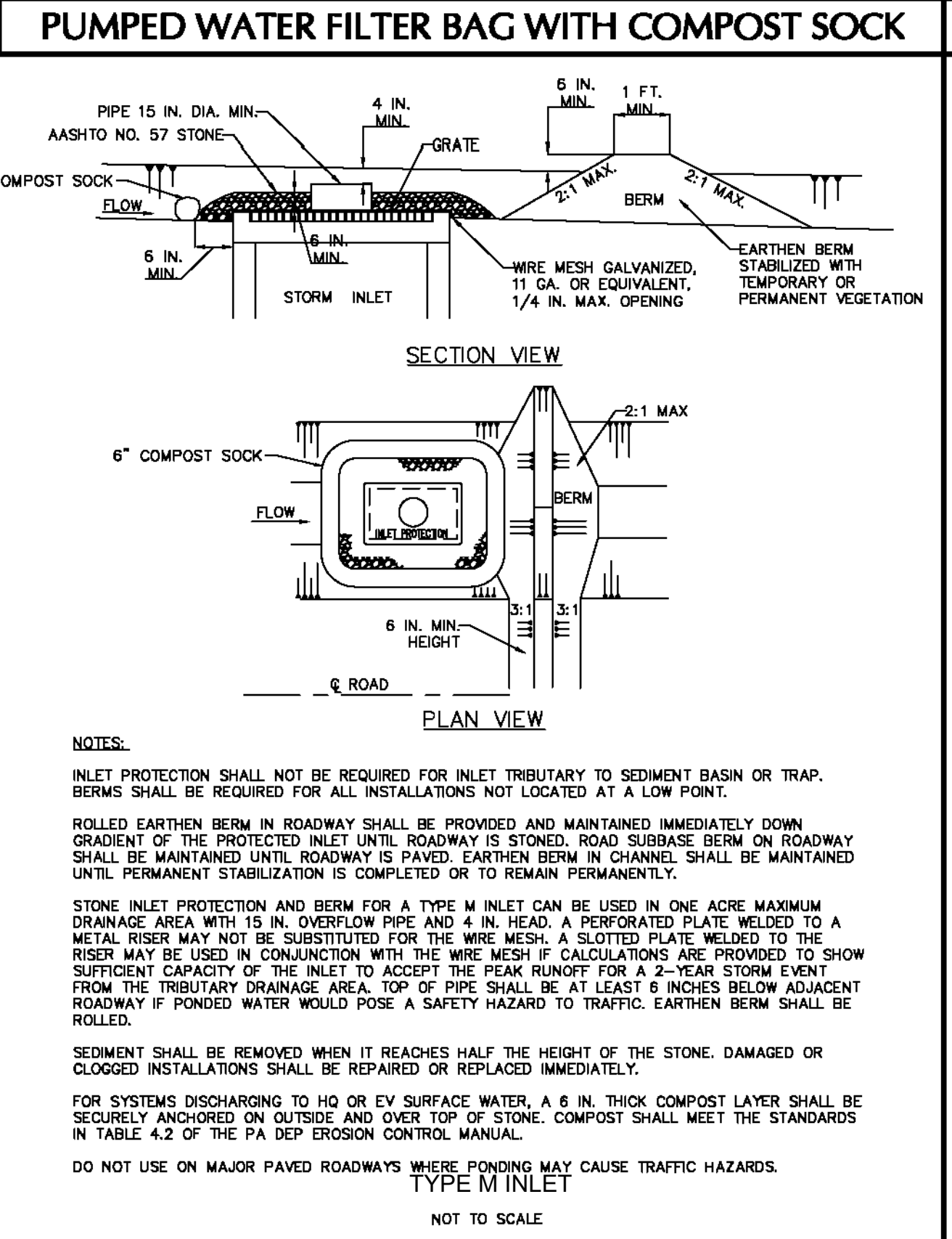
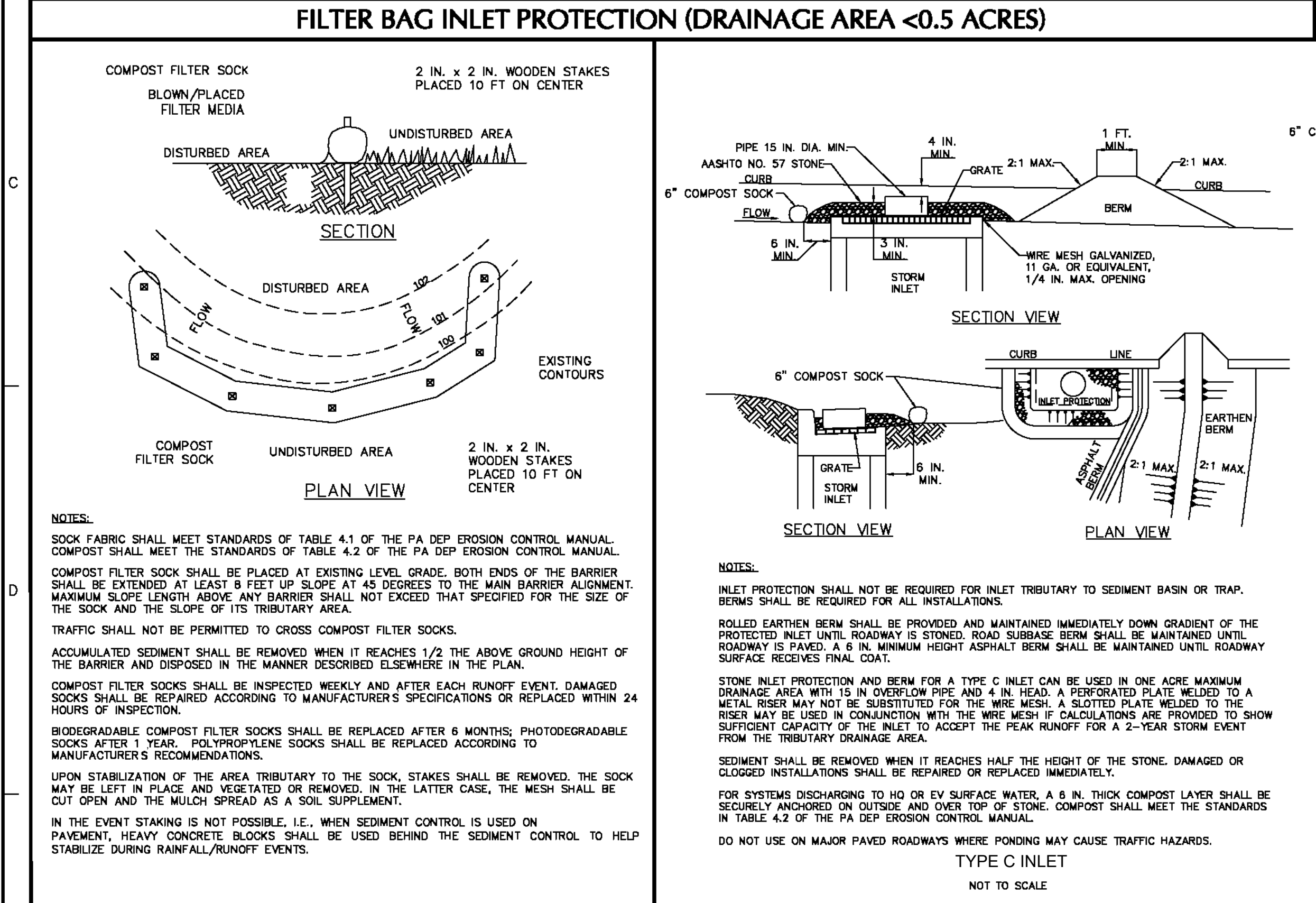
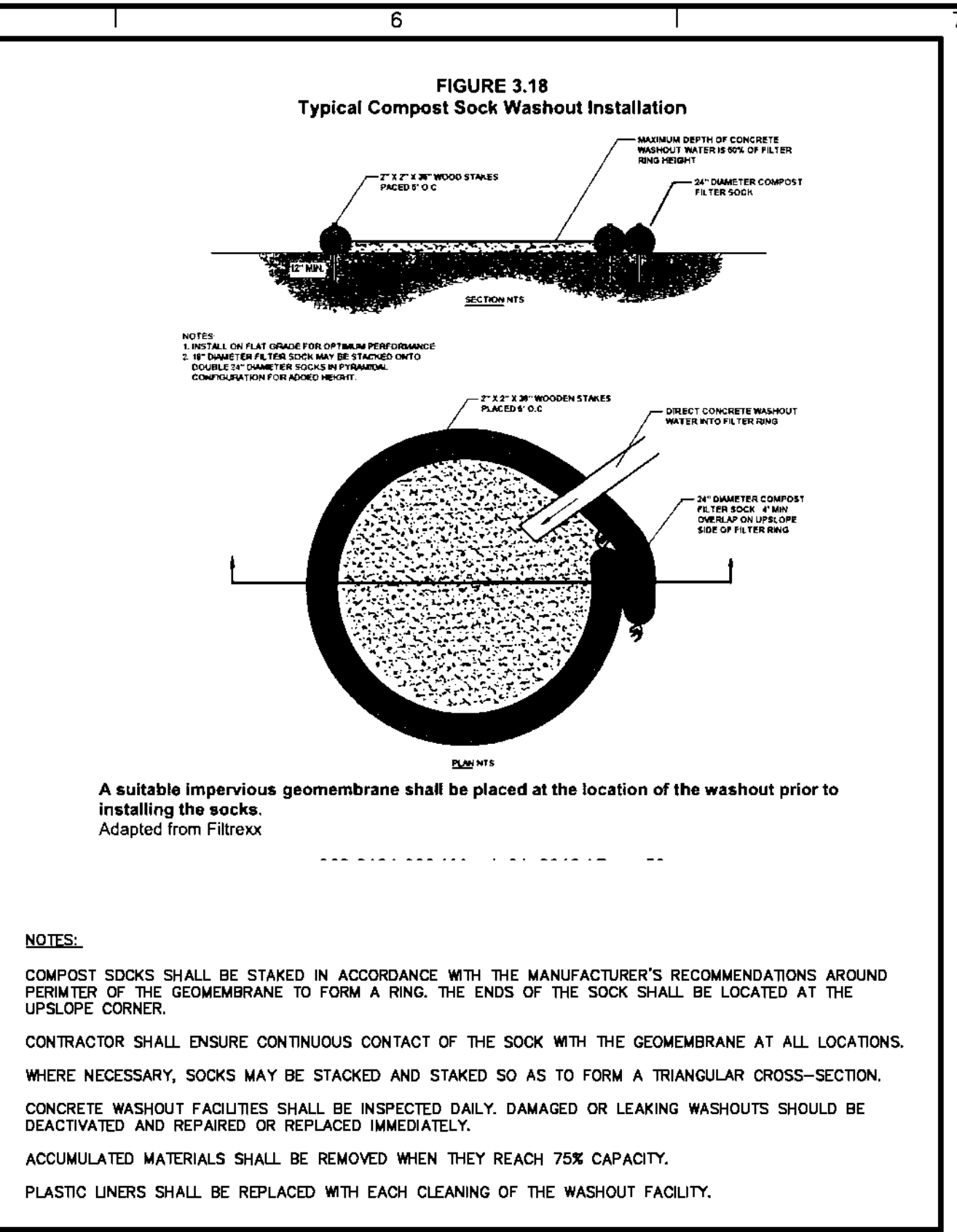
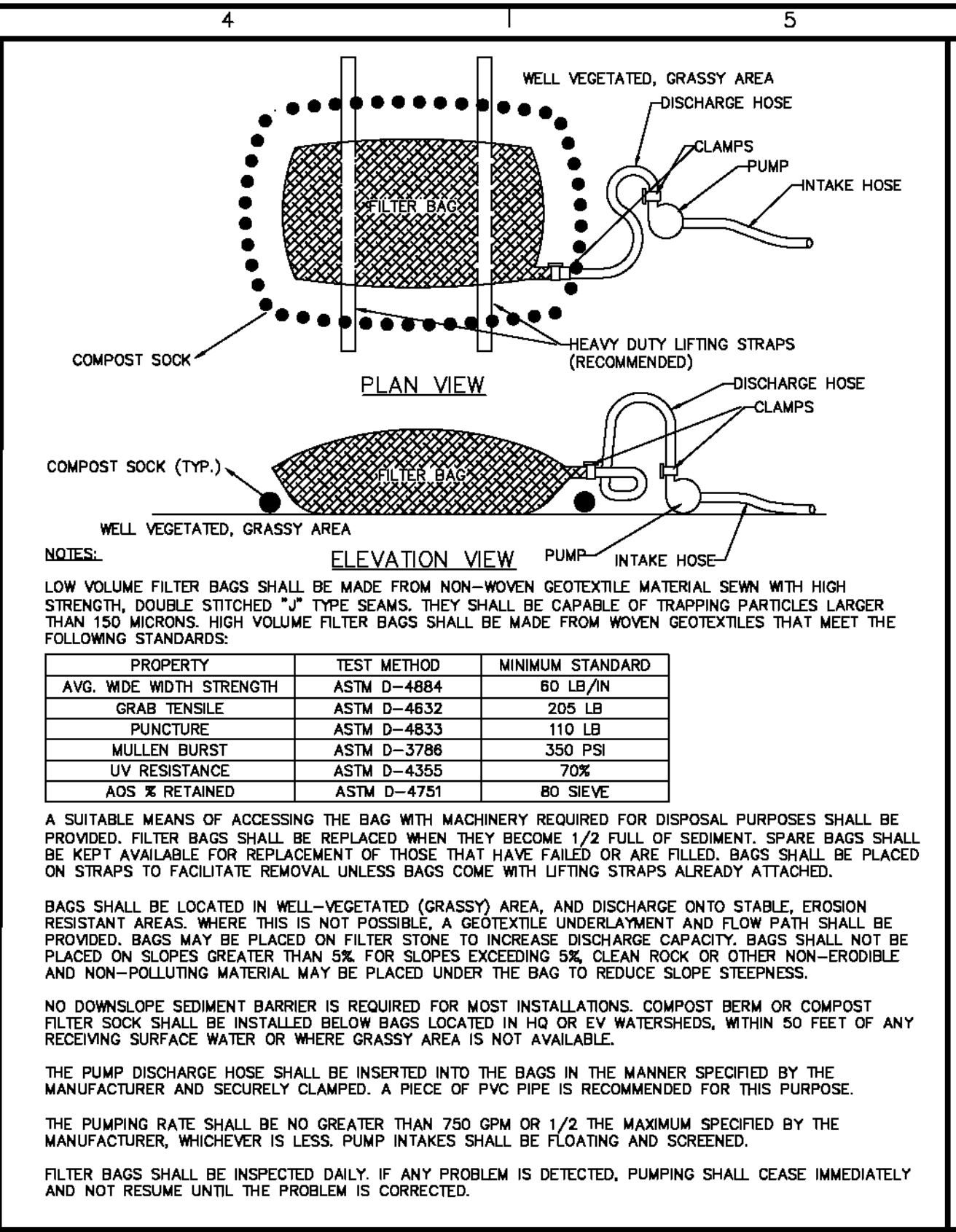
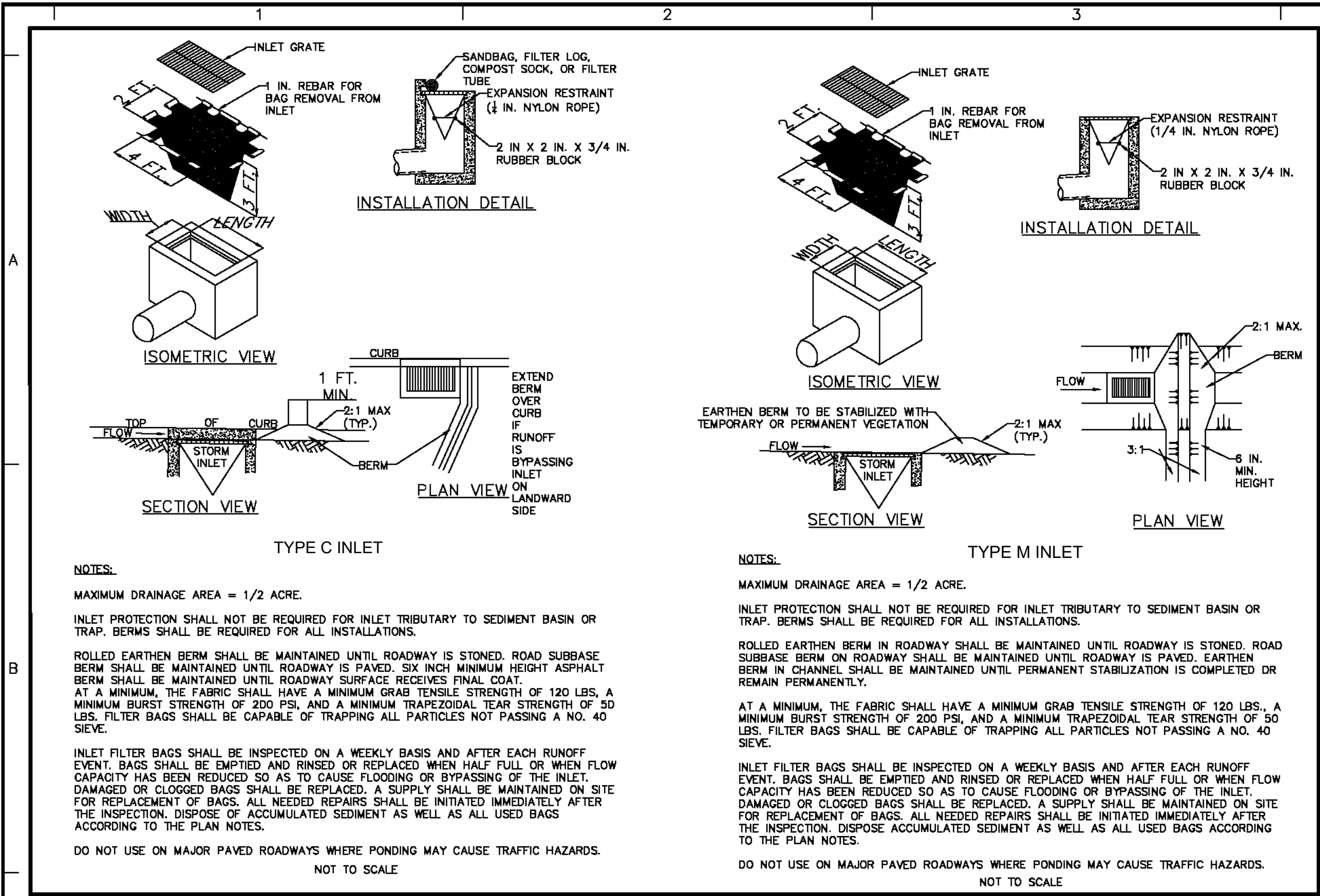
Project title: NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS, ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA. Drawing title: SOIL EROSION AND SEDIMENT CONTROL PLAN.

Project No. 220154401, Date 12 AUGUST 2025, Drawn By TFH/AEB, Checked By BMC, Sheet 14 of 18.



Project No. 220154401

2025 Langan



Date	Description	No.
Revisions		
<b>BRIAN M. CONLON</b> PROFESSIONAL ENGINEER PA Lic. No. PE061782		
<b>LANGAN</b> Langan Engineering and Environmental Services, Inc. 1818 Market Street, Suite 3300 Philadelphia, PA 19103 T: 215.845.8900 F: 215.845.8901 www.langan.com		
Project		
<b>NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS</b> ABINGTON TOWNSHIP MONTGOMERY COUNTY PENNSYLVANIA		
Drawing Title		
<b>SOIL EROSION AND SEDIMENT CONTROL DETAILS</b>		
Project No.		<b>CE-501</b>
Date		
Drawn By		
Checked By		
220154401 12 AUGUST 2025 TFF/AEB BMC		Sheet 15 of 18

Project No. 220154401

STANDARD E&S NOTES FROM PADEP APPENDIX C OF MARCH 2012 EROSION AND SEDIMENT POLLUTION CONTROL PROGRAM MANUAL

- IF ANY OF THESE NOTES CONFLICT WITH OTHER NOTES ON THIS DRAWING, THESE NOTES SHALL APPLY.
1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.

- 19. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES --- 4 TO 12 INCHES ON COMPACTED SOILS --- PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM UNIFORM PERENNIAL VEGETATIVE COVER OF 75% CAPACITY.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SURFACE SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.

- 31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPs MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPs. AREAS DISTURBED DURING REMOVAL OF COMPOST SOCKS SHALL BE STABILIZED IMMEDIATELY.
32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.

Table with 3 columns: BMP, Maintenance, Frequency. Rows include: Silt Fence, Compost Filter Sock, Concrete Washout Area, Filter Bag Inlet Protection.

NOTE: AT A MINIMUM, ALL BMPs MUST BE INSPECTED ON A WEEKLY BASIS AND AFTER MEASURABLE STORM EVENTS OF AT LEAST 0.25" BASIS

SOIL EROSION AND SEDIMENTATION CONTROL MAINTENANCE PROGRAM:

- ALL MEASURES STATED ON THIS EROSION AND SEDIMENT CONTROL PLAN, AND IN THE STORMWATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE.
1. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION, STABILIZATION, AND MAINTENANCE OF ALL TEMPORARY EROSION CONTROL, MEASURES AND RELATED ITEMS INCLUDED WITHIN THIS PLAN.

UTILITY INSTALLATION AND TRENCH EXCAVATION GUIDELINES

- 1. CONSTRUCTION REQUIREMENTS --
A. LIMIT ADVANCE CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO TIMES THE LENGTH OF PIPE.
B. WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.

GENERAL NOTES:

- 1. AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL NOTIFY ALL CONTRACTORS, THE LANDOWNER, ALL APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE OF THE BUCKS COUNTY CONSERVATION DISTRICT TO AN ON-SITE PRE-CONSTRUCTION MEETING.
2. AT LEAST 3 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES MUST NOTIFY PENNSYLVANIA ONE CALL SYSTEM INCORPORATED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.

TEMPORARY SEEDING

- A. THE FOLLOWING SURFACES OF THE SITE SHALL BE TEMPORARILY SEEDDED AND MULCHED.
1) THE SURFACE OF TOPSOIL STOCKPILES.
2) THE SURFACE OF EXPOSED EARTH AREAS THAT WILL BE EXPOSED WITHOUT CONSTRUCTION ACTIVITY THEREON.
B. SEEDING SHALL OCCUR IMMEDIATELY AFTER ESTABLISHMENT OF THE TOPSOIL STOCKPILES OR ROUGH GRADED AREAS. THE FOLLOWING SHALL BE PLANTED:

MAINTENANCE OF PROPOSED BMPs

- COMPOST FILTER SOCK -- INSPECT COMPOST FILTER SOCKS WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCK SHALL BE REPLACED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
PLUMBED WATER FILTER BAG -- INSPECT PLUMBED WATER FILTER BAGS WEEKLY AND AFTER EACH RUNOFF EVENT. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME FULL OF SEDIMENT. FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED. COMPLETE REPORT FOR ALL INSPECTIONS AND/OR MAINTENANCE AS CONDUCTED.

TEMPORARY MULCHING

- A. MULCH PROPOSED LANDSCAPE AREAS OR TOPSOIL STOCKPILES IF EARTHWORK IS COMPLETED OUTSIDE OF THE RECOMMENDED PLANTING SEASONS FOR TEMPORARY SEEDING OR DUE TO UNFAVORABLE WEATHER CONDITIONS.
B. MULCH SHALL BE APPLIED IMMEDIATELY FOLLOWING THE ESTABLISHMENT OF THE TOPSOIL STOCKPILE OR ROUGH GRADING.
D. MULCH WITH SUITABLE FIBROUS FUELWOOD, FRESHLY AGED HARDWOOD, PINEWOOD BARK, STRAW, OR HAY UNIFORMLY AND CONTINUOUSLY TO A LOOSE DEPTH OF 3 INCHES MINIMUM. ANCHOR AS REQUIRED.

MAINTENANCE PROGRAM

- THE CONTRACTOR WILL BE RESPONSIBLE FOR THE PROPER CONSTRUCTION STABILIZATION, AND MAINTENANCE OF ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL, MEASURES AND RELATED ITEMS INCLUDED WITHIN THIS PLAN. THE CONTRACTOR WILL ALSO BE RESPONSIBLE FOR THE PROPER CONSTRUCTION AND STABILIZATION OF PERMANENT CONTROL, MEASURES AND RELATED ITEMS INCLUDED WITHIN THIS PLAN.
UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT CONTROL BMPs MUST BE MAINTAINED PROPERLY. MAINTENANCE MUST INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT CONTROL BMPs AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEANOUT, REPAIR, REPLACEMENT, RE-GRADING, RESEEDING, RE-MULCHING AND RE-NETTING MUST BE PERFORMED IMMEDIATELY.

PERMANENT SEEDING

- A. PERMANENT SEEDING SHALL OCCUR IMMEDIATELY AFTER THE FINAL GRADING IS COMPLETED. SEED WITH PERENNIAL RYEGRASS PER THE APPLICATION RATES BELOW.
B. REMOVE ALL DEBRIS, INCLUDING LARGE STONES, TILL SOIL TO A DEPTH OF FOUR INCHES TO SIX INCHES. APPLY LIME AT A RATE OF 4 TONS PER ACRE OR STRAW MULCH AT A RATE OF 3 TONS PER ACRE. BEFORE JUNE 15, APPLY 180-180 LBS. OF 5-10-10 FERTILIZER PER ACRE. BEFORE OCTOBER 30, APPLY 1740 LBS. OF 10-5-5 FERTILIZER PER ACRE. WORK FERTILIZER INTO TOP INCH OF SOIL.

EMERGENCY SEEDING

- DURING CONSTRUCTION, ALL DISTURBED AREAS SHOULD BE SEEDDED ACCORDING TO THE FOLLOWING INSTRUCTIONS: SEEDING RECOMMENDATIONS FOR SIX (6) TO TWELVE (12) MONTH PERIODS.
A. INSTALL NEEDED WATER-CONTROL MEASURES.
B. PERFORM ALL CULTURAL OPERATIONS AT RIGHT ANGLES TO THE SLOPE.

**IN AREAS OF EXCAVATION, ALL EXISTING UTILITIES TO REMAIN SHALL BE CHECKED FOR PROPER COVER AS REQUIRED BY THE UTILITY OWNER. SHOULD MINIMUM COVER NOT EXIST, THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH SAID UTILITY COMPANY TO LOWER THE UTILITY TO PROVIDE PROPER COVER.**

**REFER TO DETAIL SHEETS CU-501 AND CU-502 FOR SANITARY SEWER AND WATER DETAILS**

**ALL UTILITIES ARE UNDERGROUND UNLESS NOTED OTHERWISE.**

**TELEPHONE, GAS, AND ELECTRIC LINES ARE SHOWN GRAPHICALLY TO REPRESENT THESE UTILITIES. ACTUAL DESIGN, SIZE AND LOCATION FOR THESE UTILITIES TO BE PROVIDED BY MEP DESIGNER AND/OR UTILITY COMPANY**

**ALL WORK WILL BE PERFORMED IN STRICT COMPLIANCE WITH THE PROVISIONS OF PA STATE ACT 287, GOVERNING THE INSTALLATION OF PUBLIC UTILITIES.**

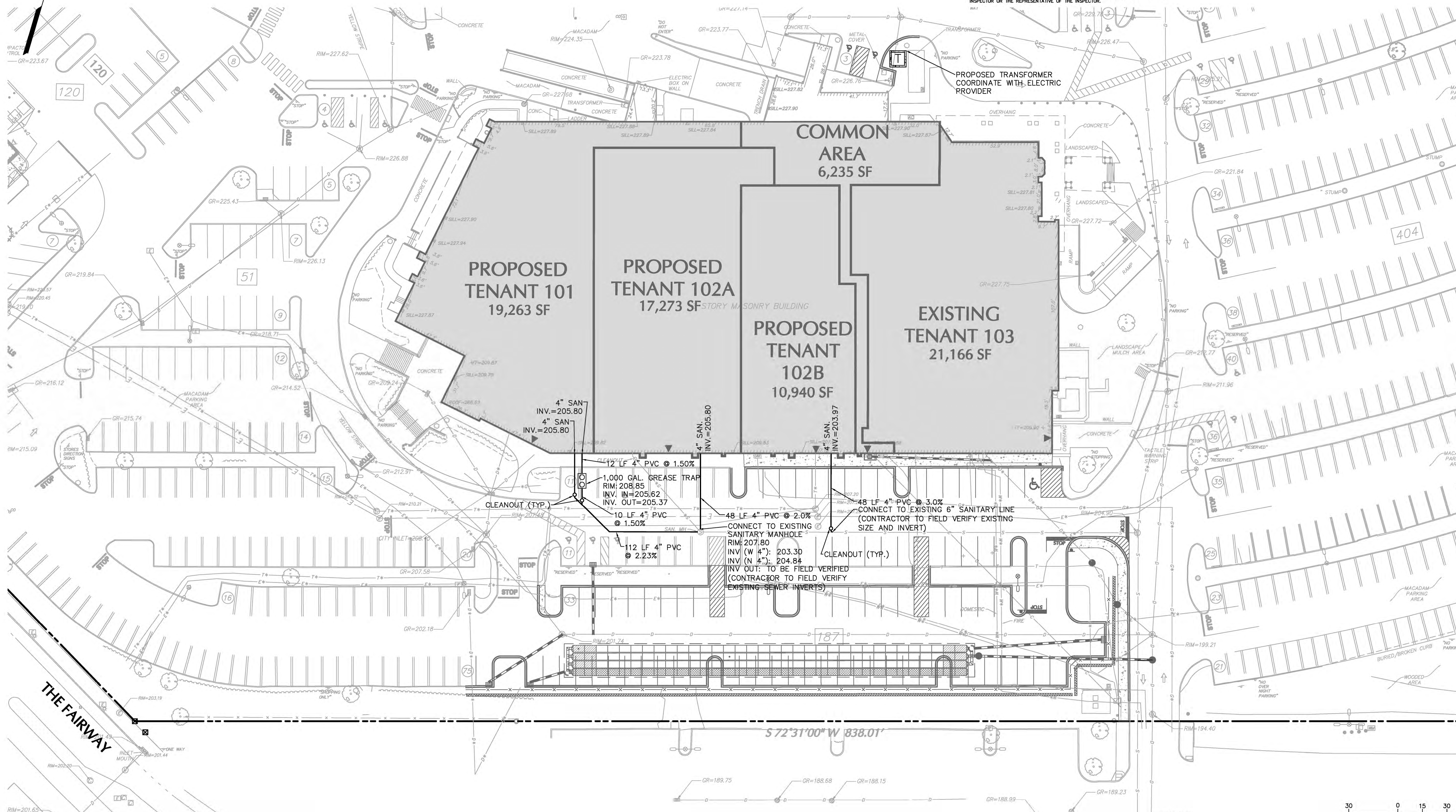
**UTILITY NOTES:**

- ALL WORK MUST BE INSTALLED IN ACCORDANCE WITH ABINGTON TOWNSHIP, AND THE ABINGTON TOWNSHIP WASTEWATER UTILITIES DEPARTMENT.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES, INCLUDING LOCATIONS, DEPTHS AND INVERTS PRIOR TO CONSTRUCTION. ANY CONDITIONS FOUND TO DIFFER FROM THOSE SHOWN BY THESE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.
- THE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATIONS OF ALL UTILITIES ENTERING THE BUILDING, INCLUDING SANITARY SEWER LATERALS, DOMESTIC WATER SERVICE AND FIRE PROTECTION, ELECTRIC, TELEPHONE AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND TO ENSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH THE UTILITY COMPANIES AS TO LOCATION AND SCHEDULING OF CONNECTIONS TO THEIR FACILITIES.
- THE STORM DRAINAGE SYSTEM IS SHOWN FOR INFORMATIONAL PURPOSES ONLY. REFER TO DRAWING CG-101 FOR COMPLETE GRADING AND DRAINAGE LAYOUT.
- IT IS IMPERATIVE THAT UTILITY COMPANIES BE NOTIFIED PRIOR TO ANY EXCAVATION AND/OR CONSTRUCTION. CALL 1-800-242-1776 TO ORDER MARK-OUTS.
- THE ROUTING OF ALL UTILITIES IS SUBJECT TO ADJUSTMENT TO MEET UTILITY COMPANY REQUIREMENTS AND SPECIFICS OF BUILDING MECHANICAL DESIGN. WHEN BUILDING MECHANICAL DRAWINGS ARE COMPLETE AND UTILITY REQUIREMENTS ARE FINALIZED, NECESSARY ADJUSTMENTS SHALL BE MADE AS PART OF THE PREPARATION OF CONSTRUCTION DOCUMENTS.
- THE CONTRACTOR SHALL ADJUST ALL EXISTING AND PROPOSED UTILITY FRAMES, COVERS, MANHOLES, VALVE BOXES, ETC. TO BE FLUSH WITH THE PROPOSED SURFACE ELEVATIONS.
- ALL ELECTRIC, TELEPHONE, TELEVISION AND OTHER COMMUNICATION FACILITIES, BOTH MAIN AND SERVICE LINES SHALL BE PROVIDED BY UNDERGROUND WIRING WITHIN EASEMENTS OR DEDICATED PUBLIC RIGHTS-OF-WAY.
- ALL UTILITIES SHOULD BE KEPT TEN (10') APART (PARALLEL) OR WHEN CROSSING 18" VERTICAL CLEARANCE (OUTSIDE EDGE OF PIPE TO OUTSIDE EDGE OF PIPE).
- CONTRACTOR SHALL MAINTAIN A MINIMUM OF 4'-0" COVER ON ALL WATERLINES.
- EXISTING UTILITIES SHALL BE VERIFIED IN FIELD PRIOR TO INSTALLATION OF ANY NEW LINES.
- REFER TO INTERIOR PLUMBING DRAWINGS FOR TIE-IN OF ALL UTILITIES.
- CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE SPECIFICATIONS OF THE LOCAL AUTHORITIES WITH REGARDS TO MATERIALS AND INSTALLATION OF THE WATER AND SEWER LINES.
- ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICE.
- CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS.
- REFER TO BUILDING PLANS FOR SITE LIGHTING ELECTRICAL PLAN.
- SEWER LINES SHOULD BE INSTALLED AT LEAST 18" BELOW WATER LINES WHERE THEY CROSS.
- ALL UTILITIES (INCLUDING BUT NOT LIMITED TO WATER, STORM WATER, GAS, ELECTRIC, PHONE, ETC.) SHALL HAVE A MINIMUM 18 INCHES OF VERTICAL CLEARANCE AND 10 FEET OF HORIZONTAL CLEARANCE WITH SANITARY LINES, OR WHATEVER IS REQUIRED BY THE INDIVIDUAL UTILITY, WHICHEVER IS GREATER. SANITARY LINES SHALL BE LOCATED BELOW WATER LINES.
- ALL ENGINEERING AND CONSTRUCTION WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS IN THE TOWNSHIP OF ABINGTON CODE, UPDATED JUNE 2023, AND THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION DOCUMENT, "DOMESTIC WASTEWATER FACILITIES MANUAL", 302-3300-001, 10/97, AS AMENDED, UNLESS OTHERWISE NOTED. AT THE TIME PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL MEET WITH ABINGTON TOWNSHIP WASTEWATER UTILITIES DEPARTMENT REPRESENTATIVES TO COORDINATE THE PROJECT SCHEDULE AND DETERMINE IF ANY OTHER DESIGN CHANGES OR RELATED ISSUES NEED TO BE RESOLVED.
- ALL SEWER LINES SHALL BE PRESSURE TESTED AND MANHOLES VACUUM TESTED PRIOR TO ABINGTON TOWNSHIP WASTEWATER UTILITIES DEPARTMENT ACCEPTANCE OF CONSTRUCTION.
- A WRITTEN PERMIT MUST BE OBTAINED FROM THE DEPARTMENT OF PUBLIC HEALTH BEFORE UNCOVERING, MAKING ANY CONNECTIONS WITH OR OPENING INTO, USE, ALTER OR DISTURB ANY PUBLIC SEWER OR APPURTENANCE THEREOF.
- A SEWAGE ENFORCEMENT OFFICER OF THE TOWNSHIP OF ABINGTON SHALL BE ALLOWED TO INSPECT THE WORK AT ANY STAGE OF CONSTRUCTION. THE PERSON HOLDING THE PERMIT SHALL NOTIFY THE SEWAGE ENFORCEMENT OFFICER WHEN THE WORK IS READY FOR INSPECTION AND BEFORE ANY WORK IS COVERED. AN INSPECTION OF THE DISPOSAL SYSTEM SHALL BE MADE WITHIN 72 HOURS, EXCEPT SUNDAYS AND HOLIDAYS, FROM RECEIPT OF NOTICE TO INSPECT.
- THE APPLICANT FOR THE BUILDING SEWER CONNECTION PERMIT SHALL NOTIFY THE PLUMBING INSPECTOR WHEN THE BUILDING SEWER IS READY FOR INSPECTION AND CONNECTION TO THE PUBLIC SEWER. THE REMOVAL OF THE STOPPER IN OR TAPPING OF THE PUBLIC SEWER SHALL BE MADE UNDER THE SUPERVISION OF THE PLUMBING INSPECTOR OR THE REPRESENTATIVE OF THE INSPECTOR.

**GENERAL SITE NOTES:**

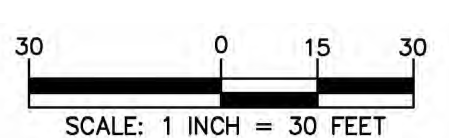
- THE CONTRACTOR SHALL FURNISH, INSTALL, TEST AND COMPLETE ALL WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION, AS SUCH, THESE PLANS DO NOT COMPLETELY REPRESENT, NOR ARE THEY INTENDED TO REPRESENT, ALL SPECIFIC INSTRUCTIONS REQUIRED FOR STEWART CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO CONSTRUCT ALL IMPROVEMENTS DEPICTED ON THESE PLANS IN ACCORDANCE WITH ALL APPLICABLE RULES, REGULATIONS AND LAWS IN EFFECT AT THE TIME OF CONSTRUCTION.
- THE CONTRACTOR SHALL ACCEPT THE SITE AS IS. THE CONTRACTOR SHALL ASSESS CONDITIONS, AND THE KIND, QUALITY AND QUANTITY OF WORK REQUIRED. THE OWNER AND ENGINEER MAKE NO GUARANTEE IN REGARD TO THE ACCURACY OF ANY INFORMATION THAT WAS OBTAINED DURING INVESTIGATIONS. THE CONTRACTOR SHALL MAKE A THOROUGH SITE INSPECTION IN ORDER TO FIELD CHECK EXISTING SITE CONDITIONS, CORRELATE CONDITIONS WITH THE DRAWINGS AND RESOLVE ANY POSSIBLE CONFLICTS WITH THE OWNER AND ENGINEER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL PERFORM ADDITIONAL TOPOGRAPHIC SURVEYS HERE/SHOWN NECESSARY, PROVIDED THEY ARE COORDINATED WITH THE OWNER. ANY CONDITIONS DETERMINED BY THE CONTRACTOR THAT DIFFER FROM THE INFORMATION SHOWN ON THE DRAWINGS THAT ARE NOT BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO THE START OF WORK SHALL NOT BE CONSIDERED GROUNDS FOR ADDITIONAL PAYMENT OR CHANGES TO THE CONTRACT DURATION, OR ANY OTHER CLAIMS AGAINST THE OWNER OR OWNER'S ENGINEER.
- THE CONTRACTOR SHALL, WHEN HE/SHE DEEMS NECESSARY, PROVIDE A WRITTEN REQUEST FOR INFORMATION (RFI) TO THE OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE, AND ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITEWORK ITEM. THE RFI SHALL BE IN A FORM ACCEPTABLE TO OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE, AND ENGINEER AND SHALL ALLOW FOR A MINIMUM OF THREE WORK DAYS FOR A WRITTEN REPLY. RFIS SHALL BE NUMBERED CONSECUTIVELY BY DATE SUBMITTED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITEWORK ITEMS CONSTRUCTED DIFFERENTLY THAN INTENDED OR AS DEPICTED ON THE PLANS.
- INFORMATION RELATED TO ELEVATIONS AND PROPOSED UTILITIES (SUCH AS ROADWAY GRADES, INVERT ELEVATIONS, RIM ELEVATIONS, GRADE ELEVATIONS, BUILDING FINISHED FLOOR ELEVATIONS, ETC.) MAY BE FOUND IN MORE THAN ONE LOCATION IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL SUPERINTENDENT REVIEW ALL PLANS, PROFILES AND ANY OTHER INFORMATION IN THE CONTRACT DOCUMENTS FOR CONSISTENCY PRIOR TO BID. ANY INCONSISTENCIES OR DISCREPANCIES THAT ARE FOUND BY THE CONTRACTOR OR HIS ASSIGNS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER IN WRITING, IN THE FORMAT OF AN RFI, PRIOR TO BID.
- THERE ARE ADDITIONAL NOTES, SPECIFICATIONS AND REQUIREMENTS CONTAINED THROUGHOUT THE PLAN SET AS WELL AS REFERENCES TO SPECIFICATIONS FROM APPLICABLE GOVERNING AUTHORITIES AND INDUSTRY STANDARDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN, REVIEW AND ADHERE TO ALL THESE DOCUMENTS.
- CONTRACTOR IS SPECIFICALLY CAUTIONED THAT ALL CONSTRUCTION STAKEOUT FOR THIS PROJECT MUST BE COMPLETED FROM THE SITE SPECIFIC SURVEY CONTROL (HORIZONTAL AND VERTICAL) UPON WHICH THE DESIGN IS BASED. THE CONTRACTOR SHOULD NOT RELY ON OR RE-ESTABLISH SURVEY CONTROL BY GPS OR OTHER METHODS FOR USE IN CONSTRUCTION STAKEOUT OR ANY OTHER PURPOSE FOR THIS PROJECT. ANY DISCREPANCIES BETWEEN THE SURVEY STAKEOUT AND ANY OTHER DATA SHOWN ON THESE DRAWINGS AND THAT ENCOUNTERED IN THE FIELD MUST BE REPORTED TO THE DESIGN TEAM PRIOR TO CONSTRUCTION FOR RESOLUTION.

UTILITY LEGEND	
EXISTING	PROPOSED
SANITARY SEWER MAIN	—S—
WATER MAIN	—W—
WATER BEND	—W—
WATER TEE	—W—
GATE VALVE	—W—
FIRE HYDRANT	—W—
GAS	—G—
GAS METER	—G—
ELECTRIC	—E—
TELEPHONE	—T—
TRANSFORMER PAD	—T—
STORM PIPE	—D—
SANITARY CLEANOUT	—C—
SANITARY MANHOLE	—M—



Date	Description	No.
Revisions		
BRIAN M. CONLON PROFESSIONAL ENGINEER PA Lic. No. PE061782		
Langan Engineering and Environmental Services, Inc. 1818 Market Street, Suite 3300 Philadelphia, PA 19103 T: 215.845.8900 F: 215.845.8901 www.langan.com		
Project		
<b>NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS</b> ABINGTON TOWNSHIP MONTGOMERY COUNTY PENNSYLVANIA		
Drawing Title		
<b>UTILITY PLAN</b>		

Project No.	220154401	<b>CU-101</b>
Date	12 AUGUST 2025	
Drawn By	TFH/AEB	
Checked By	BMC	
Sheet 17 of 18		



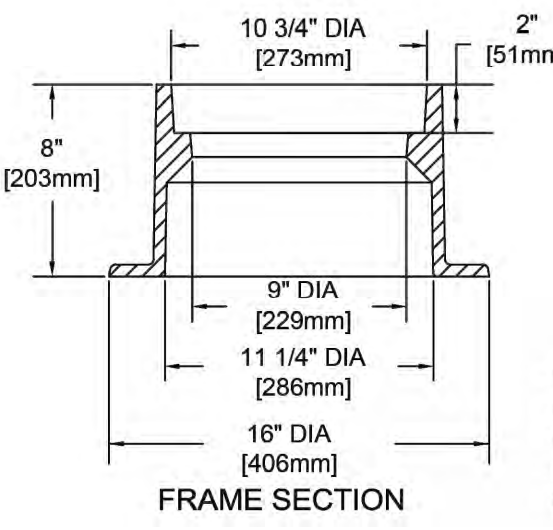
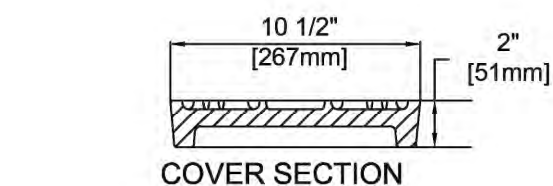
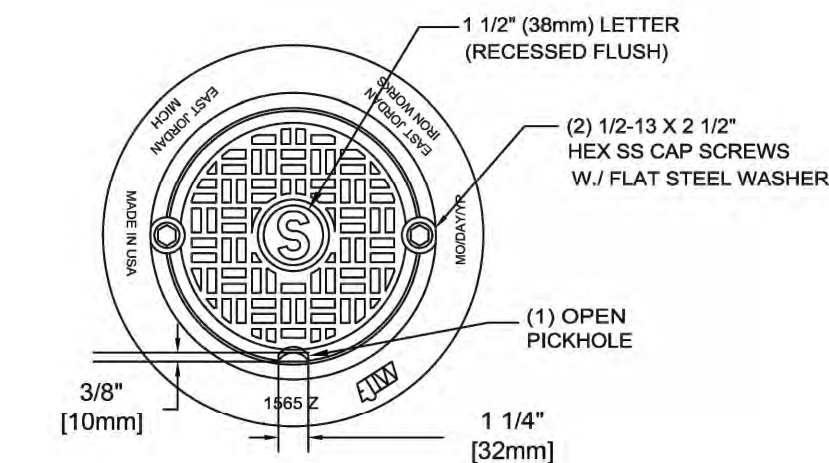
**SANITARY SEWER NOTES:**

- ALL PRECAST CONCRETE MANHOLE SECTIONS INCLUDING BASE, BARREL AND CONE SECTIONS MUST HAVE BOTH VERTICAL AND HORIZONTAL REINFORCING STEEL. SHOP DRAWINGS FOR THE PRECAST CONCRETE MANHOLES MUST CLEARLY SHOW BOTH VERTICAL AND HORIZONTAL REINFORCING STEEL AND BE APPROVED BY THE ENGINEER.
- ONE (1) ADDITIONAL PRECAST CONCRETE MANHOLE BARREL SECTION SHALL BE REQUIRED PER PROJECT. THE INSPECTOR WILL RANDOMLY SELECT A BARREL SECTION ON SITE TO BE DESTROYED TO VERIFY THE REQUIRED VERTICAL AND HORIZONTAL REINFORCING STEEL.
- OBsolete ON-SITE SANITARY SEWER FACILITIES MUST BE REMOVED.
- IF CONNECTING TO AN EXISTING SANITARY SEWER MAIN OR MANHOLE, UTILIZE THE METHOD OF CORING AND THE USE OF A LINK-SEAL TO CONNECT.
- ELASTOMERIC SEAL MATERIAL SHALL COMPLY WITH THE REQUIREMENTS OF ASTM F477. JOINTS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM D3216.
- PROPOSED LATERAL SHALL BE 6" DIP PIPE UNLESS OTHERWISE NOTED.
- NO LATERAL MAY BE DEEPER THAN 9 FEET AT ITS FREE END, MEASURED TO THE INVERT, UNLESS PERMITTED BY THE ENGINEER. LATERALS SHALL BE CONNECTED TO THE SEWER MAIN AT A WYE FITTING OR APPROVED WYE SADDLE.
- THE CONTRACTOR IS TO CONSTRUCT THE LATERAL TO WITHIN FIVE (5) FEET OF THE BUILDING. THE FREE END OF ALL LATERALS MUST END WITH A BELL SECTION OF PIPE. THE LATERALS MUST BE LAID ON A BEDDING OF A MINIMUM THICKNESS OF 6". THE BEDDING MATERIAL IS TO BE 2A COARSE AGGREGATE FOR DUCTILE IRON PIPE.
- THE FREE END OF ALL LATERALS MUST BE PLUGGED WITH AN APPROVED PUSH-ON TYPE PLUG. WHEN THE FREE END OF THE LATERAL IS LESS THAN TWO (2) FULL PIPE LENGTHS FROM THE SEWER MAIN, OR WHEN REQUIRED BY THE ENGINEER, AN APPROVED MECHANICAL EXPANSION PLUG SHALL BE USED. ALL PLUGS MUST BE CAPABLE OF WITHSTANDING THE REQUIRED AIR TEST AND MUST BE WATERTIGHT.
- ROCK IN ALL LATERAL TRENCHES MUST BE REMOVED TO A POINT NO LESS THAN TWO (2) FEET BEYOND THE END OF THE PIPE.

**STRUCTURES SHOWN ON THESE DRAWINGS INCLUDING BUT NOT LIMITED DRAINAGE STRUCTURES (INLETS, CATCH BASIN AND MANHOLES), SANITARY MANHOLES, METER PITS AND UNDERGROUND VAULTS ARE NOT STRUCTURALLY DESIGNED. THE DETAILS PROVIDE TYPICAL DIMENSIONS, LOCATION OF PIPE PENETRATIONS, PIPE INVERTS AND GROUND ELEVATIONS AT THE STRUCTURE RIM OR GRATE ONLY. THE STRUCTURAL DESIGN INCLUDING WALL AND SLAB THICKNESS AS WELL AS REINFORCING SHALL BE THE RESPONSIBILITY OF THE PRECAST MANUFACTURER TO MEET STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND HS-20 OR HS-25 LOADING REQUIREMENTS WHEN POSITIONING TRAVELED WAYS. STRUCTURAL DESIGN (WALL AND SLAB THICKNESS AND ALL REINFORCING), WHERE THE UNIT IS WITHIN THE TRAVELED WAY, SHALL BE BY PRECASTER AND SHALL MEET STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND SUPPORT HS-20 OR HS-25 LOADING AS REQUIRED.**

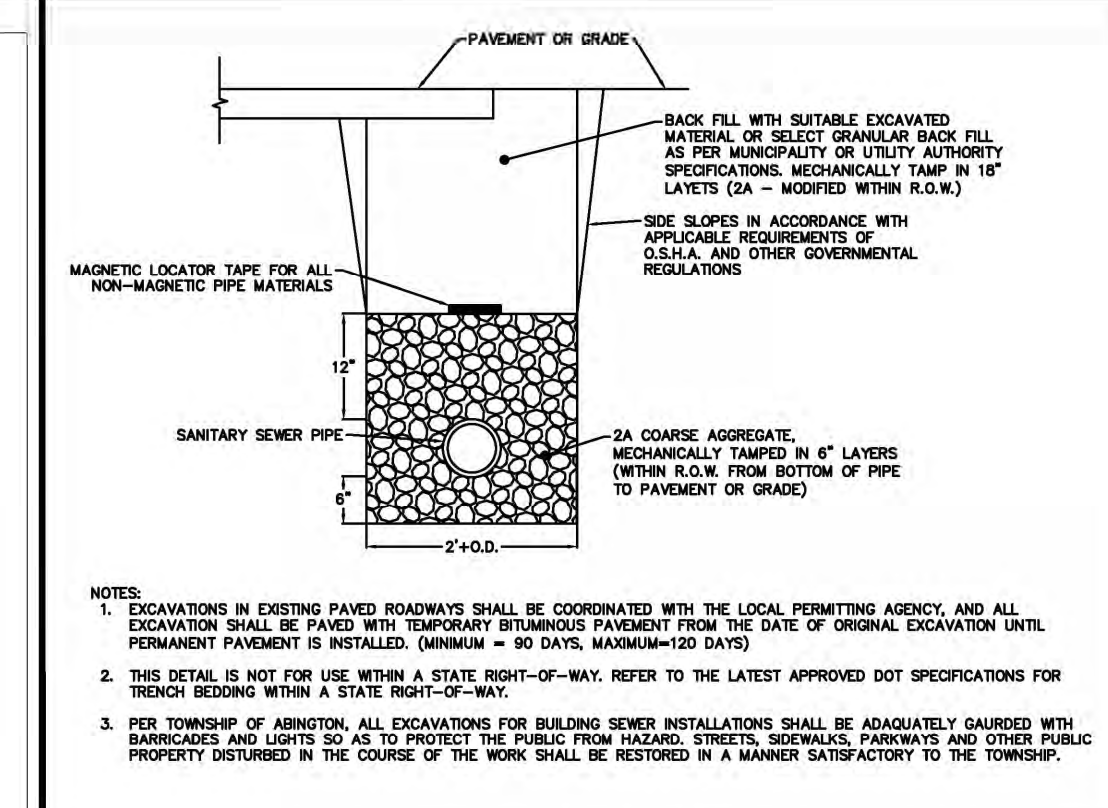
**UTILITY INSTALLATION AND TRENCH EXCAVATION:**

- CONSTRUCTION REQUIREMENTS -
  - LIMIT ADVANCE CLEARING AND GRUBBING OPERATIONS TO A DISTANCE EQUAL TO TWO (2) TIMES THE LENGTH OF PIPE INSTALLATION THAT CAN BE COMPLETED IN ONE (1) DAY.
  - WORK CREWS AND EQUIPMENT FOR TRENCHING, PLACEMENT OF PIPE, PLUG CONSTRUCTION AND BACKFILLING WILL BE SELF CONTAINED AND SEPARATE FROM CLEARING AND GRUBBING AND SITE RESTORATION AND STABILIZATION OPERATIONS.
  - LIMIT DAILY TRENCH EXCAVATION TO THE LENGTH OF PIPE PLACEMENT, PLUG INSTALLATION AND BACKFILLING THAT CAN BE COMPLETED THE SAME DAY.
  - WATER THAT ACCUMULATES IN THE OPEN TRENCH WILL BE COMPLETELY REMOVED BY PUMPING, AS REQUIRED, TO A FACILITY FOR REMOVAL OF SEDIMENT IN ACCORDANCE WITH "PADEP" GUIDELINES.
  - ON THE DAY FOLLOWING PIPE PLACEMENT AND TRENCH BACKFILLING, THE DISTURBED AREA WILL BE GRADED TO BE FINAL CONTOURS AND APPROPRIATE TEMPORARY EROSION AND SEDIMENT POLLUTION CONTROL MEASURES/FACILITIES WILL BE INSTALLED. SEEDING AND MULCHING OF ALL DISTURBED AREAS WILL BE DONE AT THE END OF EACH WEEK.
- BACKFILLING - AFTER THE PIPE AND ITS APPURTENANCES HAVE BEEN SATISFACTORILY INSTALLED AND COVERED, THE TRENCH SHALL BE BACKFILLED IN SIX (6) INCH LAYERS AND IN SUCH A MANNER AS NOT TO DISTURB THE PIPE. HOWEVER, 8-INCH LAYERS WILL BE PERMITTED WHEN USING VIBRATORY COMPACTION EQUIPMENT PROVIDED BACKFILL MATERIAL IS SUITABLE FOR COMPACTION TESTING. EACH LAYER OF BACKFILL SHALL BE THOROUGHLY COMPACTED WITH MECHANICAL TAMPERS OR BY OTHER ACCEPTABLE METHODS, FOR THE FULL TRENCH WIDTH. THE BACKFILL SHALL BE COMPACTED TO NOT LESS THAN 100% OF THE DETERMINED DRY WEIGHT DENSITY OF THE BACKFILL MATERIAL.
- EXCEPTIONS - IN CERTAIN CASES TRENCHES CANNOT BE BACKFILLED UNTIL THE PIPE IS HYDROSTATICALLY TESTED, OR ANCHORS AND OTHER PERMANENT FEATURES ARE INSTALLED IN THESE CASES, ALL OF THE REQUIREMENTS LISTED UNDER ITEM 1 WILL REMAIN IN EFFECT WITH THE FOLLOWING EXCEPTIONS:
  - DAILY BACKFILLING OF THE TRENCH MAY BE DELAYED FOR SIX DAYS. ALL PRESSURE TESTING AND THE COMPLETE BACKFILLING OF THE OPEN TRENCH MUST BE COMPLETED BY THE SEVENTH WORKING DAY.
  - IF DAILY BACKFILLING IS DELAYED, THE DISTURBED AREA WILL BE GRADED TO FINAL CONTOURS APPROPRIATE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES/FACILITIES WILL BE INSTALLED, AND THE AREAS SEEDED AND MULCHED WITHIN THE NEXT TWO CALENDAR DAYS.
  - SIDES OF TRENCHES SHALL BE KEPT AS NEARLY VERTICAL AS POSSIBLE, AND THE TRENCHES SHALL BE EXCAVATED TRUE TO THE LINE SO THAT A CLEAR SPACE EIGHT (8) INCHES IN WIDTH IS PROVIDED ON EACH SIDE OF THE BARREL OF THE PIPE TO A HEIGHT NOT LESS THAN ONE (1) FOOT ABOVE THE TOP OF THE PIPE. IF SHEETING IS REQUIRED AT THE LEVEL OF THE PIPE, THE DIMENSIONS IN THE FOREGOING SENTENCE SHALL BE APPLICABLE TO THE INSIDE FACES OF THE SHEETING.
  - THE CITY SHALL HAVE THE RIGHT TO LIMIT THE AMOUNT OF TRENCH OPENED IN ADVANCE OF PIPE LAYING AND THE AMOUNT OF PIPE LAID IN ADVANCE OF BACKFILLING, BUT IN NO CASE SHALL MORE THAN FOUR HUNDRED (400) FEET OF TRENCH BE OPENED AT ANY ONE PLACE IN ADVANCE OF THE COMPLETED PIPE. THE TRENCH SHALL NOT BE OPENED FOR A DISTANCE OF MORE THAN FIVE HUNDRED (500) FEET AT ANY ONE TIME.
  - NO TRENCH WITHIN A PUBLIC STREET SHALL BE LEFT UNCOVERED AT THE CLOSE OF THE WORK DAY. NO OTHER TRENCH SHALL BE LEFT UNCOVERED FOR MORE THAN FIVE CONSECUTIVE WORKING DAYS. STEEL PLATES OF ADEQUATE STRENGTH MAY BE USED TO COVER OPENINGS WITH THE PRIOR APPROVAL OF THE CITY ENGINEER.
  - PRIOR TO PERFORMING ANY BLASTING, THE CONTRACTOR MUST OBTAIN ALL NECESSARY LICENSES AND PERMITS. PROTECTIVE MEASURES MUST BE USED TO INSURE SAFETY TO ADJACENT PROPERTY.
  - THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR INJURY TO PERSONS OR PROPERTY THAT MAY RESULT FROM THE USE OF EXPLOSIVES. ALL BLASTING SHALL BE PERFORMED UNDER THE SUPERVISION OF A LICENSED BLASTER, AND SHALL BE SUBJECT TO STATE, COUNTY AND LOCAL REGULATIONS.
  - WHEN PIPE IS TO BE INSTALLED IN FILL, THE EMBANKMENT SHALL BE CONSTRUCTED TO AT LEAST ONE (1) FOOT ABOVE THE PROPOSED TOP OF THE PIPE. THE EMBANKMENT SHALL THEN BE EXCAVATED TO THE PROPER FORM AND GRADE, AND THE PIPE INSTALLED. THE EMBANKMENT SHALL THEN BE CONSTRUCTED TO NOT LESS THAN THREE AND ONE HALF (3 1/2) FEET ABOVE THE TOP OF THE PIPE.

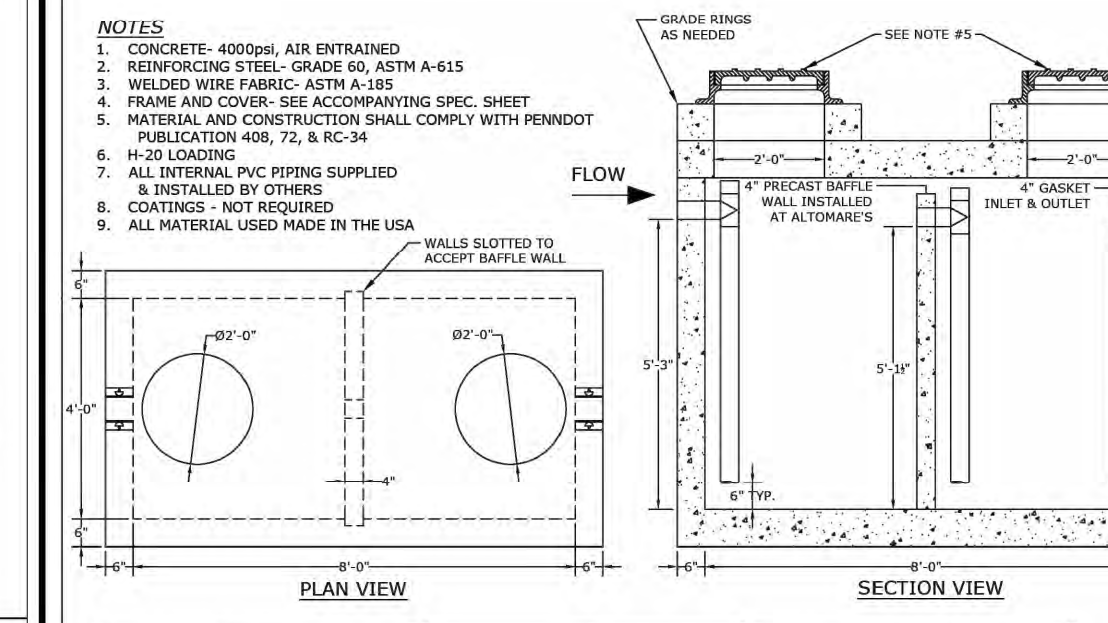


Castings to be treated by the manufacturer with water-based, black asphaltic, environmentally safe coating, free of surface rust, before leaving the foundry.

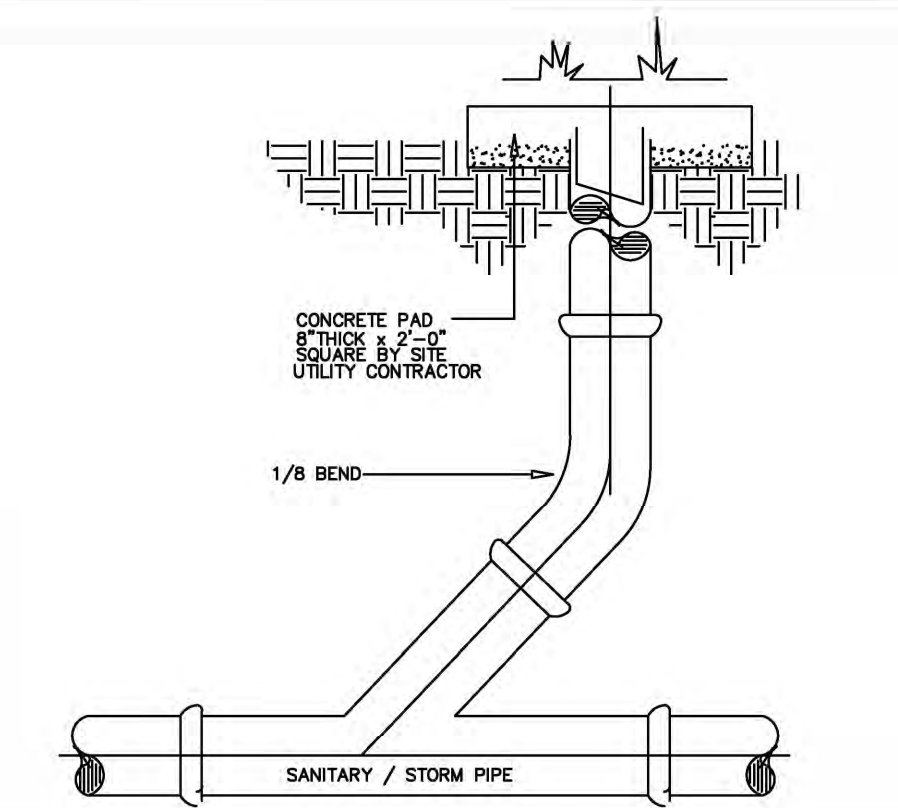
Township of Abington  
STANDARD DETAIL - SANITARY SEWER SYSTEM  
**CLEAN OUT FRAME AND COVER ASSEMBLY**



**PIPE BEDDING**



Altomare Precast, Inc.  
4300 Wissahickon Avenue  
Philadelphia, PA 19129  
Ph: 215-225-8900 Fax: 215-225-8900  
PROJECT: 8'x4' 1000 Gallon Grease Tank  
CONTR: DATE:



**SANITARY CLEANOUT**

Date	Description	No.
Revisions		



BRIAN M. CONLON  
PROFESSIONAL ENGINEER  
PA Lic. No. PE061782

**LANGAN**  
Langan Engineering and Environmental Services, Inc.  
1818 Market Street, Suite 3300  
Philadelphia, PA 19103  
T: 215.845.8900 F: 215.845.8901 www.langan.com

Project  
**NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS**  
ABINGTON TOWNSHIP  
MONTGOMERY COUNTY PENNSYLVANIA

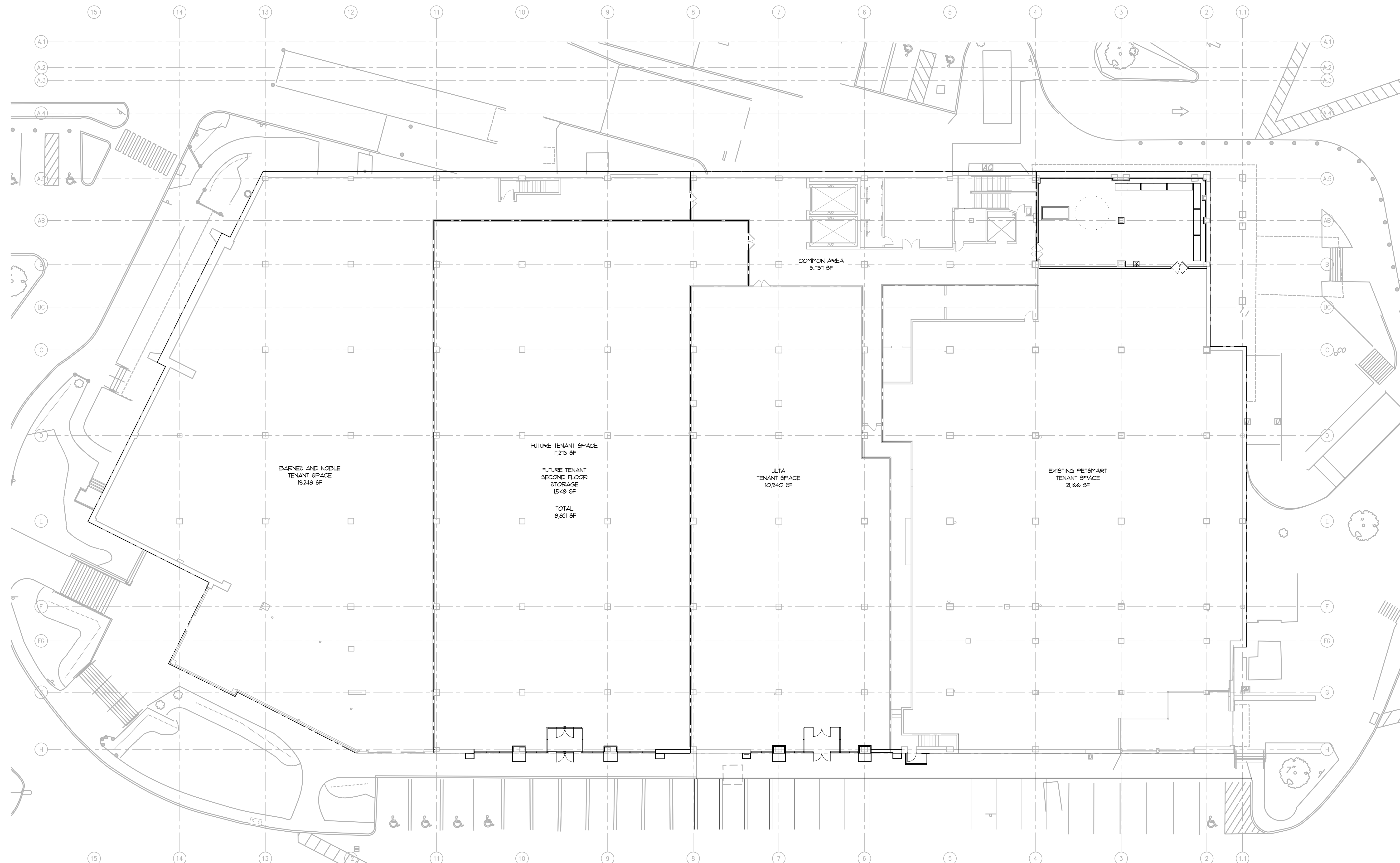
Drawing Title  
**UTILITY NOTES & DETAILS**

Project No. <b>220154401</b>	<b>CU-501</b>
Date <b>12 AUGUST 2025</b>	
Drawn By <b>TFH/AEB</b>	
Checked By <b>BMC</b>	
Sheet <b>18</b> of <b>18</b>	

Project No. 220154401

©2025 Langan

HOWARD V. LEBOLD, AIA  
 PA # A 012553-Y  
 THE CONTRACTOR SHALL  
 VERIFY ALL SITE CONDITIONS  
 AND DIMENSIONS PRIOR TO  
 PROCEEDING WITH THIS  
 WORK. NOTIFY THE  
 ARCHITECT IMMEDIATELY OF  
 ANY DISCREPANCIES OR  
 UNUSUAL CONDITIONS  
 BEFORE BEGINNING THE  
 WORK. WORK MUST  
 CONFORM WITH ALL  
 APPLICABLE CODES.

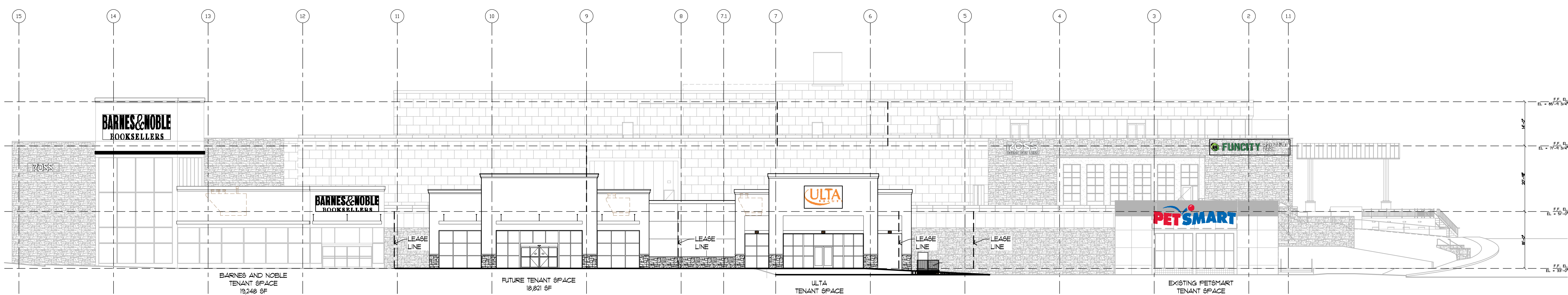


**1 NTC FIRST FLOOR LEASE PLAN**  
 LP-1 NEW WORK SCALE: 1/16" = 1'-0"

PARAMOUNT NOBLE TOWN CENTER  
 LANDLORD WORK  
 901 OLD YORK ROAD, JENKINTOWN, PA 19046

**NOBLE TOWN CENTER LEASING AREA**

DESCRIPTION	LEASABLE AREA	COMMON AREA
MALL - FIRST FLOOR		5,751 SF
EXISTING PETSMA <span style="font-size: small;">RT</span>	21,666 SF	
ULTA BEAUTY	10,340 SF	
FUTURE TENANT	17,173 SF	
BARNES AND NOBLE	19,348 SF	
MALL - SECOND FLOOR		3,533 SF
EXISTING ROSS	26,061 SF	
FUN CITY	33,671 SF	
FUTURE TENANT STORAGE	15,48 SF	
MALL - THIRD FLOOR		9,174 SF
SALON	12,864 SF	
FUTURE TENANT	1,116 SF	
WALGREENS		N/A
HONEYCROW	2,375 SF	
LABERAILWAY	1,900 SF	
DIG	2,355 SF	
SHAKE SHACK	3,072 SF	
TOTAL	160,549 SF	18,464 SF



**2 NTC SOUTH ELEVATION**  
 LP-1 NEW WORK SCALE: 1/16" = 1'-0"

REVISION NO.

DRAWING  
**NOBLE TOWN CENTER  
 FIRST FLOOR  
 LEASING PLAN**

PROJECT NO.  
 21.026.00  
 DRAWN  
 WZ  
 SCALE  
 AS NOTED  
 DATE  
 08.13.2025  
 DRAWING NO.



October 10, 2025

ABINT130045

Mr. Christopher S. Christman, Township Manager  
Abington Township  
1176 Old York Road  
Abington, PA 19001

**RE: LD-25-03 – Noble Town Center South Parking Improvements**  
**PARID: 30-00-49688-00-7/ TMID: 30177 022**  
**Preliminary/Final Land Development Plans Review (1<sup>st</sup> Submission)**

Dear Mr. Christman:

We have received a copy of the "Preliminary and Final Land Development Plan" consisting of eighteen (18) sheets dated August 12, 2025, and received on September 2, 2025; as prepared by the Langan Engineering, located at 1818 Market Street, Suite 3300, Philadelphia, PA for the above referenced project on behalf of the Applicant Paramount JSM at Jenkintown, LLC. The application was deemed completed on September 8, 2025.

This project is located within the BC Noble – Business Center Noble Zoning District. The site is fronted by Old York Road (S.R. 611) to the west; The Fairway to the south; and commercial properties zoned within the BC Noble – Business Center Noble Zoning District in all other directions.

Under this submission, the Applicant is proposing to redevelop an approx. 36,289 SF portion of the existing southern parking lot which will result in a decrease in impervious area of approximately 860 SF. Other improvements associated with this redevelopment include new curbing, sidewalks, parking lot planting islands, retaining wall, stormwater inlets, and a subsurface stormwater management basin.

In accordance with the FEMA, Flood Insurance Rate Map (FIRM) Panel No.42091C0401G, effective March 2, 2016, the tract is identified to be primarily located within Zone X, an area outside the 0.2% chance flood and minimal flood hazard. Therefore, based on the FEMA FIRM determination, this site is not located within the Floodplain Conservation District, and is therefore not subject to the floodplain regulations of the Floodplain Conservation District. In addition, per the Abington Township Riparian Corridor Analysis Map, Figure 15.2, this parcel is not located with the Riparian Corridor and is therefore not subject to the regulations of the Riparian Corridor Conservation District.

Based on the existing contours shown on the plan, there are no areas of precautionary steep slopes (greater than 15% to 25%) and prohibitive steep slopes (greater than 25%); therefore, the site is determined to not be located within the Steep Slope Conservation Overlay District and is not subject to the regulations of the Steep Slope Conservation Overlay District.

The Applicant is not requesting any variances as part of this Land Development Application.

The Applicant is not requesting any waivers as part of this Land Development Application.

The following documents have been reviewed:

Title	Sheet	Dated	Revised
<b>Land Development Plans</b>			
Cover Sheet	1 of 12	8/12/25	—
Tax Map & Zoning Map	2 of 12	8/12/25	—
Boundary and Topographic Survey	3 of 12	8/12/25	—
Site Demolition Plan	4 of 12	8/12/25	—
Overall Site Plan	5 of 12	8/12/25	—
Site Plan	6 of 12	8/12/25	—
Site Construction Details	7 of 12	8/12/25	—
Grading Plan	8 of 12	8/12/25	—
Drainage Plan	9 of 12	8/12/25	—
Storm Sewer Profiles	10 of 12	8/12/25	—
Grading and Drainage Notes & Details I	11 of 12	8/12/25	—
Grading and Drainage Notes & Details II	12 of 12	8/12/25	—
Grading and Drainage Notes & Details III	12 of 12	8/12/25	—
Soil Erosion & Sediment Control Plan	12 of 12	8/12/25	—
Soil Erosion & Sediment Control Details	12 of 12	8/12/25	—
Soil Erosion & Sediment Control Notes	12 of 12	8/12/25	—
Utility Plan	12 of 12	8/12/25	—
Utility Notes and Details	12 of 12	8/12/25	—
<b>PCSM Report</b>			
PCSM Narrative	231 pages	8/12/25	—

We have performed a review of the above referenced plans for compliance with the Zoning Ordinance (Chapter 162); Subdivision and Land Development Ordinance (Chapter 146); and Stormwater Management Ordinance (Chapter 142). We offer the following comments for your consideration:

**ZONING COMMENTS**

1. **Per §1102 – Permitted Uses** – In accordance with the Abington Township Comprehensive Use Matrix, the Existing and proposed uses are as follows:
  - **Existing & Proposed Use C-19 – Parking Lot Commercial** – The existing and proposed commercial parking lot is a permitted use within the BC Noble Zoning District.
  - **Existing & Proposed Use C-33 – Shopping Center** – The existing and proposed shopping center use is a permitted use within the BC Noble Zoning District.
2. **Per §1103, Figure 11.9 – Maximum Impervious Coverage** – The maximum impervious coverage shall be 70%, 75% maximum paving.

**Currently on site, the existing impervious area is listed as 70.44% which classifies this as an existing non-conformity. Under the proposed conditions, the degree of the existing nonconforming impervious area will not be increased; therefore, the proposed nonconforming impervious area would be permitted. An impervious area calculation for the existing and proposed conditions shall be provided on the plans to confirm the respective impervious areas.**

3. **Per §1103, Figure 11.9 – Minimum Public Open Space** – The minimum public open space shall be 5% of the gross floor area.

**Based on the gross floor area of the buildings on site, a minimum public open space area of 8,522 SF would be required. The plans are indicating an existing public open space area of 0 SF currently exists on site which would classify this as an existing non-conformity. Under the proposed conditions, the Applicant is proposing no change in the existing floor area of the buildings on site and a public open space area of 0 SF which would classify this as a continuation of an existing non-conformity and would be permitted to continue pursuant to Code Section §1902 – Continuation.**

4. **Per §1103, Figure 11.9 – Minimum Parking Lot Setback** – The minimum parking lot setback from public streets shall be 100 feet.

**Currently on site, the existing parking setback from public streets is listed as 14.6 feet which classifies this as an existing non-conformity. Under the proposed conditions, the degree of the existing nonconforming parking setback from public streets will not be increased; therefore, the proposed nonconforming parking setback would be permitted to continue pursuant to Code Section §1902 – Continuation.**

5. **Per §1103, Figure 11.9 – Build-to-Lines** – Based on the plan and Zoning Regulations Table provided, the existing buildings on site do not meet the build-to-requirements for the BC Noble Zoning District; therefore, the built-to-requirements are considered existing non-conformities. The Applicant is not proposing any changes to the buildings as part of this land development; therefore, the built-to-lines are permitted to continue pursuant to Code Section §1902 – Continuation.

6. **Per §1103, Figure 11.9 – Minimum Building Setback** – The minimum building setback from parking shall be 10 feet.

**Currently on site, the existing building setback from parking areas is listed as 4.8 feet which classifies this as an existing non-conformity. Under the proposed conditions, the degree of the existing nonconforming building setback from the parking areas will not be increased; therefore, the proposed nonconforming building setback from the parking areas would be permitted to continue pursuant to Code Section §1902 – Continuation.**

7. **Per §1103, Figure 11.9 – Maximum Building Height** – The maximum building height shall be 20 feet if pitched roof; 25 feet to median height of roof.

**Currently on site, the existing building heights are listed as 20.37 feet for the residential retail pad and 56.76 feet for the Noble Town Center building which classifies this as an existing non-conformity. Under the proposed conditions, no changes to the buildings are proposed; therefore, the proposed nonconforming building heights would be permitted to continue pursuant to Code Section §1902 – Continuation.**

8. **Per §1103, Figure 11.9 – Maximum Building Length** – The maximum building length shall be 300 feet.

**Currently on site, the existing building length for the Noble Town Center Building is listed as 345.4 feet, which classifies this as an existing non-conformity. Under the proposed conditions, no changes to the buildings are proposed; therefore, the proposed nonconforming building length would be permitted to continue pursuant to Code Section §1902 – Continuation.**

9. **Per §2103.A, Use A-13.1– Use Regulations, Fences and Walls** – Unless otherwise regulated, the maximum height of fences and walls shall be six (6) feet.

**Under this submission, a retaining wall along the southern property line is provided. This wall is proposed to range in height from 0.5 feet to 8 feet, which is greater than the maximum permitted 6 feet tall. The retaining wall shall be revised to be no more than 6 feet in height; otherwise, a variance from this Code Section will be required.**

10. **Per 2304.C.32 – Parking Use Requirements** – In shopping centers, 1 parking space for every 250 square feet of gross leasable floor area shall be provided. This standard applies when the gross leasable area of all buildings comprising the shopping center are greater than 10,000 square feet and less than 400,000 square feet.

**The existing shopping center on site consists of 180,525 square feet of building area. Taking the 170,427 SF of building area against the 250 SF requirement, a minimum of 723 parking spaces would be required. Currently on site, there are 988 parking spaces which is in compliance with the minimum required parking spaces. With the proposed parking lot redesign, a total of 991 parking spaces are proposed, which is also in compliance with the minimum required parking spaces.**

11. **Per §2402.A.2.a thru c – Parking Lot Landscaping** – Any new or existing parking lot where at least 50% of the parking spaces are being developed or modified, or where 15,000 SF of existing parking area has been altered, and where such parking area has at least 50 stalls, shall be landscaped in accordance with the provisions of the above Code Sections.

**Based on our measurements of the plans provided, greater than 15,000 SF of existing parking lot area with greater than 50 parking spaces will be altered; therefore, the new parking lot area shall be landscaped in accordance with the provisions of the above Code Sections.**

12. **Per §2402.A.2.a.(4) – Parking Lot Landscaping** – Each planting island shall contain one shade tree plus shrubs and/or groundcover to cover the entire area at maturity. Parking lot trees shall be a minimum of three-inches in caliper, branching at 6 to 8 feet in height and on the recommended species as listed in the “Recommended Plant Materials” list.

**Based on our measurements of the plans provided, greater than 15,000 SF of existing parking lot area with greater than 50 parking spaces will be altered; therefore, the new parking lot area shall be landscaped in accordance with the provisions of the above Code Sections.**

13. **Per §2402.A.2.b.(7) – Planting Strips** – Planting strips shall contain plantings of one canopy tree every 25 feet, with two shrubs per tree, and pervious area (consisting of green area, mulch, or pervious paving) to cover the entire remaining unplanted area at maturity.

**The planting strip between the southern parking aisle and northern parking aisle shall be landscaped in accordance with the above Code Section. A landscaping plan shall be provided indicating the landscaping to be provided in this area.**

14. **Per §2402.A.5.a – Parking Lot Perimeter Buffer** – All parking lots or areas with more than 15 parking spaces shall be buffered according to the following when any part of the parking lot lies within 150 feet of a property line, public street, or residential district:

- a. Parking lots shall be planted with a medium-intensity buffer, a minimum 10-feet in width, except where buildings, access drives, and/or walkways are located.

**The area between the south parking aisle and the southern property line shall be planted with a medium intensity landscape buffer. A landscaping plan shall be provided indicating the landscaping to be provided in this area.**

15. **Per §2403.B.4.(2).(a) & (b) – Buffer Specifications** – A medium intensity buffer is intended to partially obscure the view of a land development or provide a degree of privacy. It may consist of any of the following options:
- a. Option A: 2 canopy trees (2.5" minimum caliper), 2 understory trees (1.5" minimum caliper), 5 evergreen trees (8' minimum height), and 5 shrubs (24" minimum height) per each 100 linear feet.
  - b. Option B: A decorative, opaque wall or fence. A fence or wall, 6 feet in height. Where the fence or wall faces a public street or district permitting residential uses, shrubs shall line the outside of the fence or wall at a ratio of 10 shrubs per 100 linear feet. No more than 50% of the shrubs shall consist of any one species, they may be grouped informally or spaced evenly.

**The area between the south parking aisle and the southern property line shall be planted with a medium intensity landscape buffer and indicated in the above Code Section. A landscaping plan shall be provided indicating the landscaping to be provided in this area.**

16. **Per §2403 Figure 24.6 – Tree Species Requirements** – When trees are planted, a variety of species shall be provided.

**The proposed plantings shall ensure that a variety of tree species are provided per the requirements in Figure 24.6.**

17. **Per 2601.H.4 – Lighting Standards** – Lighting standards in parking areas shall not be located further than 200 feet apart and may not be taller than 18' in height. No pedestrian lighting standard may exceed 14 feet in height.

**Two (2) existing lights within the existing planting island are proposed to be removed and replaced as part of this project. The mounting height for the new light fixtures shall be provided to ensure the maximum 18' mounting height requirement is not exceeded.**

#### **CHAPTER 146** **SUBDIVISION & LAND DEVELOPMENT COMMENTS**

18. **Per §146-9.A & B – Type of Application** – A plan shall be either preliminary or final stage and shall be a minor or major plan submission.

**The Application submitted by the Applicant is indicating a minor land development submission, but no stage has been selected. The plans provided are indicating Preliminary/Final; however, based on the improvements proposed, the project would qualify as a final minor land development since there are no public improvements proposed. The plans shall be revised to indicate the land development number and the category and stage. Per §146-10.B.(5), the notation "LD-25-03 Final Minor Land Development" shall be provided on each page of the plan set.**

19. **Per §146-11.A.(4) – Property Identification Plans – Tract Boundaries** – The plans shall include the tract boundaries with tax parcel numbers, owner's names and approximate acreage of lots surrounding any portion of the site for a distance of 400 feet.

**Sheet GI-101 is showing the property numbers of the adjacent parcels; however, the owners names and acreage of these parcels are not provided. The plans shall be revised to include this information per the above Code Section.**

20. **Per §146-11.A.(7) – Property Identification Plans – Property Identification** – The property identification plans shall provide an indication that the elevations are based upon sanitary sewer datum of the Township of Abington.

**A note shall be provided on the plans which indicates the vertical elevation based on the sanitary sewer datum of the Township of Abington.**

21. **Per §146-11.A.(9) – Property Identification Plans – Landowner Information** – The property identification plans shall provide the names and addresses of the landowner, applicant and subdivider or land developer. With respect to the owner, the names of the real (title) owners, the names of all equitable owners and the names of all option holders shall be listed.

**Currently, the plans are only showing the parcel number for the property. The owners name and address shall also be provided per the above Code Section.**

22. **Per §146-11.B.(3) – Existing Features Plan – Property lines and Landowners** – The existing features plan shall provide the location of property lines and names of landowners within 400 feet of any part of the site to be subdivided or developed.

**An existing features plan shall be provided showing the property lines and names of landowners within 400 feet of the site per the above Code Section.**

23. **Per §146-11.B.(7) – Existing Features Plan – Utilities** – The existing features plan shall provide the location, size, and ownership of all underground and above ground public or private utilities, on the site and within 400 feet of any portion of the site, including waterlines, sanitary sewer lines, storm sewer lines, electric lines, telephone lines, gas mains, fire hydrants, and streetlights.

**An existing features plan shall be provided showing the location, size, and ownership of all underground and above ground public or private utility lines within 400 feet of the site per the above Code Section.**

24. **Per §146-11.B.(9).(a) & (b) – Existing Features Plan – Soil Identification** – The existing features plan shall provide the soil identification, including the following:

- a. Soil types within the site, based on maps contained in the Soil Survey of Montgomery County, United States Department of Agriculture, Soil Conservation Service, 1967, as amended. An attached table shall indicate each soil's development limitation, i.e., bearing value, depth to bedrock, seasonable water table, etc.
- b. Delineation of floodplain soils

**An existing features plan shall be provided showing the soil identification and resolution notes per the above Code Section.**

25. **Per §146-11.G.1.(e) – Utility Plan** – A utility plan shall be provided which shows the electric lines, junctions, vaults and other related appurtenances.

**The electrical lines to the new light fixtures shall be provided on the Utility Plan (CU-101). The new light fixtures shall be shown in full tone on the Utility Plan. The iso-foot candles for the new light fixtures**

**shall also be provided.**

26. **Per §146-11.H.(1) & (2) – Landscape Plan** – A landscape plan shall be provided, prepared by a registered landscape architect, and include the information as indicated in the above Code Sections.
27. **Per §146-12.A – Record Plan Requirements** – A record plan, which shall be a clear and legible blue or black line print on white opaque linen and shall be an exact composite overlay of the approved final property identification and proposed layout plans, on a sheet of the size required by the drafting standards.

**A record plan shall be provided as part of the plan set. The record plan shall include the proposed improvements on the site as well as the required signature blocks and seals indicated below. The Applicant may wish to consider renaming the "Overall Site Plan" to the "Record Plan" since the overall site plan includes the information required to be shown on the record plan.**

28. **Per §146-12.B – Record Plan Seals** – The following seals are required on the plan:
- 1) The impressed seal of the licensed civil engineer and/or land surveyor who prepared the plan
  - 2) The impressed corporate seal, if the subdivider or its signing party is a corporation or other entity.
  - 3) The impressed seal of a notary public or other qualified officer acknowledging the owner's statement of intent.
  - 4) The impressed seal of the Township of Abington.
  - 5) The impressed seal of the Township Engineer.

**The seals as indicated above shall be provided on the plans prior to recording of the plans at the County Recorder of Deeds office. Signature blocks for both the design engineer and surveyor shall be provided on the plans.**

29. **Per §146-12.C, D, & E – Acknowledgements & Approval Notations** – The acknowledgements and approval notations for the owner, Abington Township Board of Commissioners, and the required recording notations as indicated in the above Code Sections shall be provided on the Record Plan.

**Adequate room for the signature and seal of the Township Engineer shall be provided to ensure no text overwrites.**

30. **Per §146-28.A – Off-Street Parking Areas – Parking Spaces** – All parking spaces for vehicles shall be 10 feet wide by 20 feet long.

**The proposed parking spaces to be redeveloped are shown as 10 feet wide by 18 feet long. The redeveloped parking spaces shall be 10 feet wide by 20 feet long per the above Code Section.**

31. **Per §146-28.C – Off-Street Parking Areas – Drives and Aisleways** – Interior circulation drives and aisleways through an off-street parking area shall be a minimum of 24 feet wide, excluding areas designated for parking vehicles, for two-way traffic, and 12 feet wide for one way traffic.

**Based on the proposed improvements shown on the plan, the layout of the redeveloped parking area parking stalls are 18 feet long with a drive aisle that is 24 feet wide. Since the proposed redeveloped parking stalls are required to be 20 feet long per Section 146-28.C, the internal drive aisle would decrease from the 24 feet width to a 20 feet width and would therefore not be in compliance with the minimum 24 feet width requirement. The plans shall be revised to provide the required 20 feet long parking stalls and a minimum 24 feet wide drive aisle.**

**CHAPTER 142  
STORMWATER MANAGEMENT COMMENTS**

- 32. **Per §142-Attachment 1 – Watershed Map Figure 1.03** – Based on Figure 1.03, the proposed site in the Pennypack Creek, Area P watershed. **Based on Figure 409.1P, Area P Management District Watershed Map, the site is located within District B of the Pennypack Creek Watershed. Based on §142-409.A.1.(b) Table 409.1P the following reductions are required in the subareas:**

Area P District B Proposed Storm	Reduced To	Existing Storm
2-year		1-year
5-year		2-year
10-year		5-year
25-year		10-year
50-year		25-year
100-year		50-year

**Based on the provided PCSM Report, the required stormwater reductions are being met.**

- 33. **Per §142-106.C.(1) – Table 106.P** – This project is proposing to decrease the total impervious coverage by approximately 860 SF; however, the total limit of disturbance area is labeled as 36,289 SF. Since this project is proposing to disturb greater than 5,000 SF but less than 1 acre or area, this site will be required to follow Article III SWM Site Plan Requirements; §142-404 Nonstructural Project Design; §142-405 Groundwater Recharge; §142-408 Stream Bank Erosion Requirements; and §142-409 Stormwater Peak Rate Control and Management Districts.

**Under this submission, the Applicant is proposing stormwater inlets connecting to an approximately 260’ long by 20.5’ underground Stormkeeper system to collect and managed the stormwater runoff associated with this site disturbance and new parking lot area.**

- 34. **Per §142.302.A – SWM Site Plan Contents** – The SWM site plan shall consist of a general description of the project, including calculations, maps, and plans. A note on the maps shall refer to the associated computations and erosion and sediment (E&S) control plan by title and date. The cover sheet of the computations and E&S control plan shall refer to the associated maps by title and date. All SWM site plan materials shall be submitted to the Municipality for review, in a format that is clear, concise, legible, neat, and well organized; otherwise, the SWM site plan shall not be accepted for review and shall be returned to the applicant.

**A Post Construction Stormwater Management (PCSM) Plan shall be provided as part of the plans set. The PCSM Plan shall include the information indicated in the above Code Section. The Applicant may wish to rename the Drainage Plan (CG-102) to the PCSM Plan.**

- 35. **Per §142.302.B.(1).(m) – SWM Site Plan Requirements – Signature Block** – The following signature block for the Township shall be provided on the PCSM Plan:

**“(Municipal official or designee), on this date (date of signature), has reviewed and hereby certifies that the SWM site plan meets all design standards and criteria of the Municipal Ordinance No. \_\_\_\_\_.”**

**The above signature block is included on the Grading Plan and Drainage Plan. This signature block shall be removed from the grading plan and only be provided on the PCSM Plan.**

36. **Per §142.302.B.(2).(a) – SWM Site Plan Requirements – ERSAM** – The Applicant shall prepare an existing resource and site analysis map (ERSAM) showing environmentally sensitive areas including, but not limited to, steep slopes, ponds, lakes, streams, wetlands, hydric soils, vernal pools, stream buffers, floodplains, hydrologic soil groups, closed topographic depressions and recharge areas. Land development, existing recharge areas, and any other requirements specifically outlined in the municipal SALDO also shall be included.

**An ERSAM Plan shall be provided as part of this plan set. The Applicant may wish to consider renaming the "Boundary and Topography Survey Plan" to the "Boundary and Topographic Survey/ERSAM Plan" since the Boundary and Topographic Survey Plan provides the information required in the above Code Section.**

37. **Per §142.302.B.(2).(b).[9] – SWM Site Plan Requirements – O&M Plan** – The SWM site plan shall include an O&M plan in accordance with §142-702 of this chapter, for all existing and proposed physical stormwater management facilities. This plan shall address long-term ownership and responsibilities for O&M as well as schedules and costs for O&M activities.

**An O&M schedule and notes shall be provided on the PCSM Plan to be provided.**

38. **Per §142.302.B.(2).(b).[22] – SWM Site Plan Requirements – Easements** – The PCSM Plan shall include a 15-foot-wide easement around all stormwater management facilities to provide ingress and egress from a public right-of-way.

**A 15-foot-wide easement around any proposed stormwater management facility shall be provided. If the Applicant does not wish to provide a 15' foot wide easement, they may wish to consider providing a blanket easement for the site.**

39. **Per §142.302.B.(2).(b).[25] – SWM Site Plan Requirements – PCSM Signature Blocks** – The PCSM Plan shall include a statement, signed by the Applicant, acknowledging that any revision to the approved drainage plan must be approved by the Municipality, and that a revised erosion and sediment control plan must be submitted to the Municipality or Conservation District for approval.

**The above signature block is included on the Grading Plan and Drainage Plan. This signature block shall be removed from the grading plan and only be provided on the PCSM Plan.**

40. **Per §142.302.B.(2).(b).[26] – SWM Site Plan Requirements – Design Engineer Signature Block** – The following signature block for the design engineer shall be included on the PCSM Plan:

*"I, (Design Engineer), on this date (date of signature), hereby certify that the drainage plan meets all requirements of the Department of Environmental Protection's (DEP's) regulations and this chapter."*

**The above signature block is included on the Grading Plan and Drainage Plan. This signature block shall be removed from the grading plan and only be provided on the PCSM Plan.**

41. **Per §142-401.H – General Requirements** – No regulated activities shall commence until the Township issues written approval of an SWM site plan, which demonstrates compliance with the requirements of this chapter.
42. **Per §142-401.L – General Requirements – Dewatering** – Storage facilities should completely drain both the volume control and rate control capacities over a period of time not less than 24 hours and not more than 72 hours from the end of the design storm.

**Based on the PCSM Report provided, the proposed Stormkeeper system will dewater in approximately 50 hours, which is in compliance with the minimum 24 hour and maximum 72 hour requirement.**

43. **Per §142-405.A.(1).(a) – Groundwater Recharge Requirements** – A minimum depth of 24 inches between the bottom of the BMP and bedrock or other limiting zones such as clay layers shall be provided.

**Based on the PCSM Report and Infiltration testing report provided, the only area where a limiting layer was encountered was at test pit 2. The elevation of the refusal layer was indicated as 193.50. The details provided for the infiltration bed indicate the bottom of stone elevation at 198.00 which results in 4.5 feet between the bottom of the BMP and the top of any limiting layer, which is in compliance with the above Code Section.**

44. **Per §142-704.A – Operation and Maintenance Agreement for Privately Owned Stormwater Controls and BMPs** – Prior to final approval of the PCSM site plan, the owner shall sign and record an operation and maintenance (O&M) agreement covering all stormwater control facilities which are to be privately owned and maintained.

#### **GENERAL STORMWATER MANAGEMENT COMMENTS**

45. The Applicant is proposing two new inlets (CB-3 & CB-4) that are shown to connect to the existing stormwater piping on site and not connecting to the proposed infiltration basin. It is recommended that these inlets be tied into the proposed infiltration basin to allow the stormwater to be captured and treated.
46. On the Storm Sewer Profiles Plan (Sheet 10) a scale for the profiles is not provided. The vertical and horizontal scales shall be confirmed and included on the plan.

#### **TRAFFIC COMMENTS**

47. Due to the newly proposed tenant spaces identified on the plan, the applicant should prepare an anticipated peak hour traffic calculation associated with the application. Additionally, a traffic safety evaluation should be completed for the site driveways to Old York Road (SR 0611) and the Fairway to determine if any turn restrictions are warranted and identify any recommended signage and pavement marking modifications.

#### **GENERAL COMMENTS**

48. The Drawing Index on the cover sheet shall list the plans to be recorded.
49. There are signature blocks located on the cover sheet and on the Overall Site Plan. The signature blocks can be removed from the Cover Sheet and be provided on the Overall Site Plan (Record Plan).
50. A guide rail detail shall be provided on the plans.
51. A concrete sidewalk detail shall be provided on the plans.
52. There is a concrete paving detail shown on the Site Construction Details Plan; however, no concrete paving areas are shown on the plan. The Applicant shall confirm if concrete paving is proposed and clearly distinguish on the plans the limit of concrete paving.

**We have received the following documents/permits/reviews:**

- Aqua Letter of Water Availability (October 1, 2024)
- MCPC Request for Review (August 12, 2025)
- PCSM Narrative (August 12, 2025)
- Application for SALDO Review (August 15, 2025)
- Letter of Sanitary Sewer Availability (August 18, 2025)
- Sanitary Sewer Review (September 19, 2025)
- EAC Review (October 8, 2025)
- Fire Marshal Review (October 10, 2025)

**We have not received the following documents/permits/reviews:**

- MCPC Review
- Sanitary Sewer Approval
- Fire Marshal Approval
- STC Review Letter
- Legal Descriptions & Exhibits of all lots/easements/dedications
- Stormwater BMP O&M Agreement
- Land Development Agreement

**SUMMARY**

**We do not recommend Final Minor Land Development plans approval until the Applicant adequately addresses the above referenced comments, in particular, the zoning comments.**

If you have any questions or comments with this submittal, please do not hesitate to contact me.

Sincerely,

**PENNONI ASSOCIATES INC.**



Khaled R. Hassan, PE  
Township Engineer

cc: Terry Castorina, Administration and Grants Manager  
Ashley McIlvaine, Assistant Township Manager & Assistant CAO



TOWNSHIP OF ABINGTON

*Thomas Hecker, Board President  
Matthew Vahey, Board Vice President  
Christopher Christman, Township Manager*

October 10<sup>th</sup>, 2025

Eric Kelly  
Paramount JSM at Jenkintown, LLC  
c/o Paramount Realty  
1195 Route 70  
Suite 2000  
Lakewood, NJ 08701

Re: LD-25-03 - Noble Town Ctr South Parking Improvements  
Parcel(s) 30-00-49688-00-7

Thank you for the opportunity to review the submitted plans for South Parking Lot Improvements at Noble Towne Center, 901 Old York Road Abington, PA 19001. Plans are for the modifications made to the southern parking lot adjacent to the building.

I have reviewed the submitted plans dated "12 August 2025", for conformance with Abington Township's Subdivision and Land Development Ordinance as it related to Fire Prevention (SALDO 146-41).

At this time, I have no concerns with the Subdivision proposed in these plans as it relates to the Fire Prevention Provisions listed in Abington SALDO 146-41.

However, I would like to address the Fire Department Connection (FDC) that is located in this area and appears to be affected by this work. Modifications may not be made to this system without approval, and the system must remain accessible and operable at all times during this project and after. The scope of the project appears to prevent access to the FDC with the elevation change. A plan to address temporary and long-term access will need to be approved by the Fire Marshal's Office. Relocation of the FDC permanently would be recommended, and can be discussed with me at any time.

Should you have any questions or concerns, please feel free to contact me at 267-536-1089 or via email at [CPlatz@AbingtonPA.gov](mailto:CPlatz@AbingtonPA.gov) or [FireMarshal@AbingtonPA.gov](mailto:FireMarshal@AbingtonPA.gov).

Sincerely,

Chris Platz,  
Fire Marshal

**MONTGOMERY COUNTY  
BOARD OF COMMISSIONERS**

NEIL K. MAKHIJA, CHAIR  
JAMILA H. WINDER, VICE CHAIR  
THOMAS DIBELLO, COMMISSIONER

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**MONTGOMERY COUNTY  
PLANNING COMMISSION**

MONTGOMERY COUNTY • PO Box 311  
NORRISTOWN, PA 19404-0311

610-278-3722  
PLANNING@MONTGOMERYCOUNTYPA.GOV

SCOTT FRANCE, AICP  
EXECUTIVE DIRECTOR

October 10, 2025

Mr. Christopher S. Christman, Manager  
Abington Township  
1176 Old York Road  
Abington, Pennsylvania 19001-3713

Re: MCPC #25-0180-001  
Plan Name: Noble Town Center South Parking Improvements  
(1 lot comprising 17.90 acres)  
Situate: 901 Old York Road at The Fairway  
Abington Township

Dear Mr. Christman:

We have reviewed the above-referenced land development plan in accordance with Section 502 of Act 247, "The Pennsylvania Municipalities Planning Code," as you requested on September 8, 2025. We forward this letter as a report of our review.

## BACKGROUND

The applicant, Paramount JSM at Jenkintown, LLC, has submitted a minor plan for re-tenanting 68,642 square feet of the lower level of an existing three-story masonry building into four retail spaces (for three new tenants and one existing one) along with parking, sidewalk, stormwater management, and utility improvements. The retail spaces would occupy 21,166 square feet, 19,263 square feet, 17,273 square feet, and 10,940 square feet. The proposed improvements include: adding planting islands; adding an additional walkway to provide pedestrian access through the planting strip; adding a retaining wall and fence; removing a stairwell to the adjacent lot (where inventory parking for nearby auto dealers is located); removing two trees in a planting strip; adding subsurface stormwater management; and removing and replacing concrete for sidewalk and pavement for parking area. The site is located in the BC-Business Center zoning district (Noble). The plan is dated August 12, 2025.

## COMPREHENSIVE PLAN COMPLIANCE

In *MONTCO 2040: A Shared Vision*, Montgomery County Comprehensive Plan (2015), the project site is located in the "Community Mixed Use" future land use area. These areas should be designed for walking. The land use is consistent with the comprehensive plan, but the proposal would be more consistent if it included crosswalks connecting the building, sidewalks, and the walkway through the planting strip.

The proposed plan is generally consistent with the Comprehensive Plan Update for Abington Township (2007). On that plan’s future land use map, the proposal is located in the “Retail, Commercial, Office” future land use area.

**RECOMMENDATION**

The Montgomery County Planning Commission (MCPC) generally supports the applicant’s proposal, however, in the course of our review we have identified the following issues that the applicant and township may wish to consider prior to final plan approval. Our comments are as follows:

**REVIEW COMMENTS**

**SIDEWALKS**

- A. Taper – The applicant proposes replacing sidewalk in the southeast portion of the site, alongside the vehicular access drive from The Fairway. It looks like the new sidewalk would be slightly wider, and closer in width to the connecting sidewalk on the adjacent tract (where inventory is located for nearby automobile dealers). We recommend tapering the sidewalk so there is a smooth transition from one sidewalk to the connecting one on the adjacent tract.
- B. Sidewalks Internal to a Development [§2504.C.] -- In the BC Business Center and MS Main Street Districts, all buildings must be connected, via a continuous pedestrian network of sidewalks, crosswalks, and paths, to parking.
- C. Crosswalks [§2504.F] -- Shall be provided at all intersections of multiple access drives.

**LANDSCAPING**

- A. Landscaping Plan -- A landscaping and shade tree plan is required [§146-11.H], along with proposed landscaping and a proposed planting schedule.
- B. Tree Removal -- The applicant proposes removal of two trees in the parking strip but does not propose any new trees or vegetation. Tree replacement shall occur when new impervious coverage exceeds 500 square feet and a tree with a minimum caliper of six inches (6”) is removed. The applicant proposes removal and replacement of parking area (total area of disturbance, most of which would be parking area, would be 36,289 square feet) [§2401.A.2].
- C. Planting Islands -- The applicant proposes providing planting islands; each planting island is required to have one shade tree plus shrubs and/or groundcover to cover the entire area at maturity [§2402.A.2].
- D. Parking Lot Perimeter Buffer -- All parking lots or areas with more than 15 parking spaces shall be buffered with a medium-intensity buffer or a street wall (see §2402.A).
- E. Street Trees – Street trees shall be required along both sides of access drives that serve two or more nonresidential properties [§2402.B].

STORMWATER MANAGEMENT

A. Green Stormwater Management -- The proposed improvements include a subsurface stormwater management area. Has the applicant considered whether some of the stormwater flows can be captured using green stormwater infrastructure (GSI), which would bring benefits associated with additional vegetation?

OTHER PLAN INFORMATION

Some of the most important additional information required is the following [§146-11.A]:

- A. Tract boundaries with tax parcel numbers, owner's names and approximate acreage of lots surrounding any portion of the site for a distance of 400 feet.
- B. Existing cartways of streets adjoining the site, and ultimate rights-of-way. The applicant provided the [legal] right-of-way.

**CONCLUSION**

We wish to reiterate that MCPC generally supports the applicant’s proposal, but we believe that our suggested revisions will better achieve the township’s planning objectives for commercial development.

Please note that the review comments and recommendations contained in this report are advisory to the municipality and final disposition for the approval of any proposal will be made by the municipality.

Should the governing body approve a final plat of this proposal, the applicant must present the plan to our office for seal and signature prior to recording with the Recorder of Deeds office. A paper copy bearing the municipal seal and signature of approval must be supplied for our files. Please print the assigned MCPC number (#25-0180-001) on any plans submitted for final recording.

Sincerely,

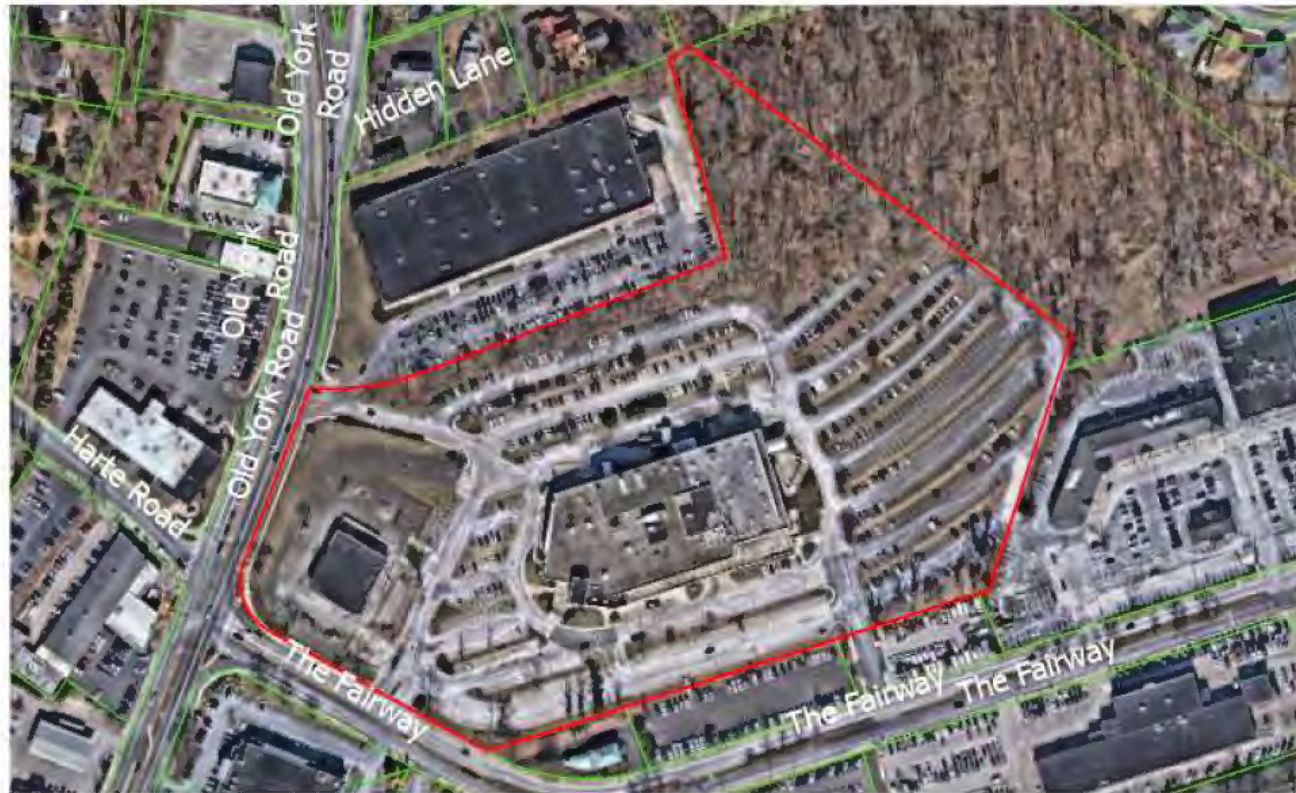


Mike Narcowich, AICP, Community Planning Assistant Manager II  
610.278.5238 – [michael.narcowich@montgomerycountypa.gov](mailto:michael.narcowich@montgomerycountypa.gov)

- c: Eric Kelly, Representative for Paramount JSM at Jenkintown, LLC
- Nicholas Brown, Chair, Township Planning Commission
- Khaled R. Hassan, P.E., Pennoni, Township Engineer
- Allison A. Lee, P.E., Pennoni, Township Engineer
- Michael P. Clarke, Esq., Rudolph Clarke, LLC, Township Solicitor
- Greg R. Heleniak, Esq., Rudolph Clarke, LLC, Township Solicitor

Attachment A: Aerial Image of Site

Attachment B: Reduced Copy of Applicant’s Proposed Site Plan



**Noble Town Center South Parking Improvements**  
MCPC#250180001

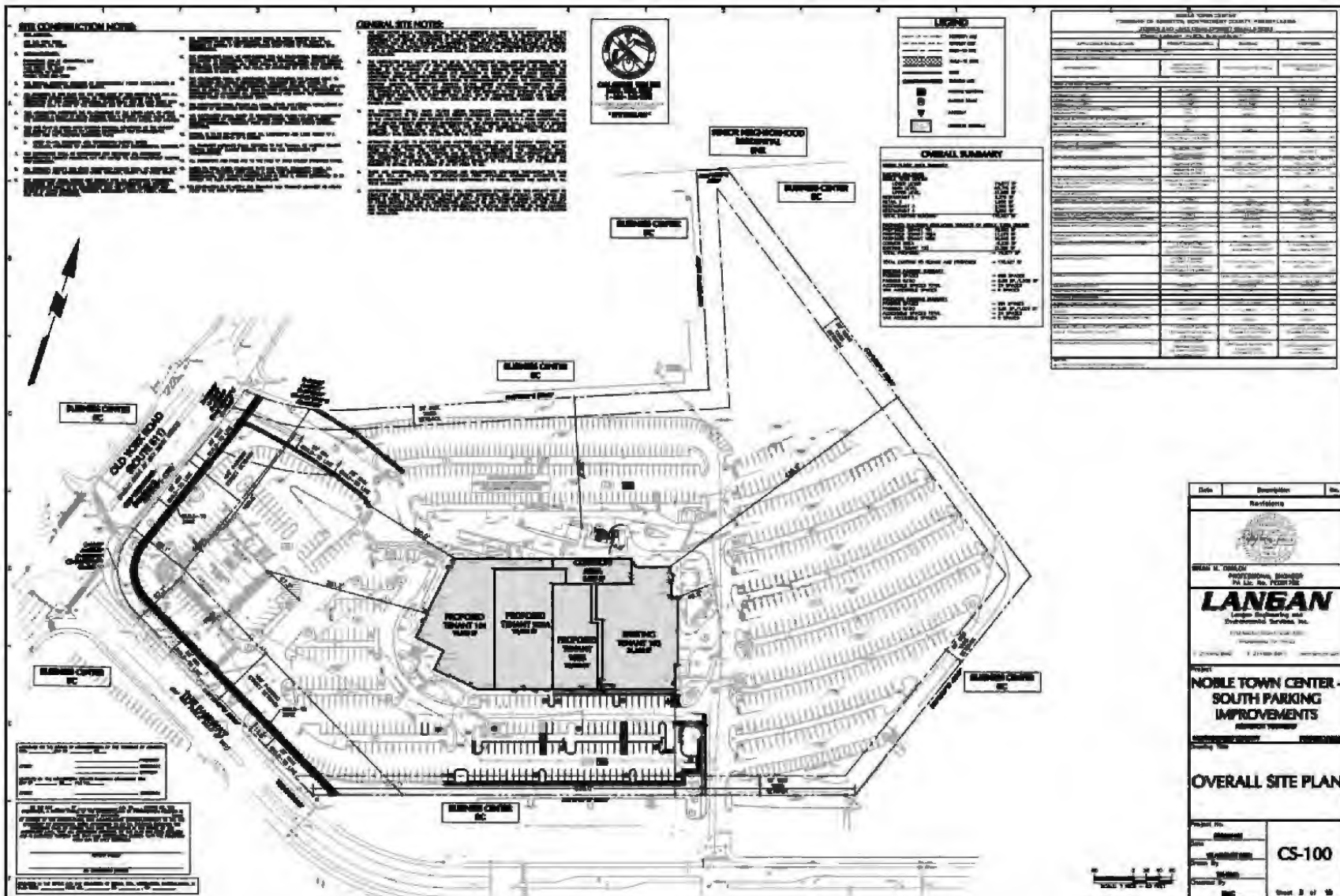
Montgomery  
County  
Planning  
Commission

Montgomery County Department of Planning & Community Development  
PO Box 311, Administration Center, 1000+4001  
(301) 616-2725 or (301) 616-2700  
www.montgomerycountypa.gov/planning

Scale: (Montgomery County) 1:10000

0 100 200 400 Feet







**October 08, 2025**

**MEMO**

**To:** Nicholas Brown, Chair – Abington Township Planning Commission  
**From:** Abington Township Environmental Advisory Council  
**RE:** Noble Town Center South Parking Improvements (LD-25-03)  
**Plan Set Date:** 08/12/2025.

**EAC Review Date: 09/10/2025 and 10/08/25**

**Site Summary**

**Owner:** Paramount JSM at Jenkintown, LLC  
**Zone – BC – Business Center**  
**Watershed:** Pennypack Creek  
**Lot Area:** 17.927 Acres

Dear Chairperson Brown:

The members of the Abington Township Environmental Advisory Council (EAC) have reviewed the above-mentioned land development plan at its regular meeting of October 08, 2025, and offer the following comments and questions:

The applicant is proposing to improve a portion of the existing 991 space parking lot area as part of a re-tenanting of the existing building located at 901 Old York Road. Improvements are limited to the parking lot area on the south side of the lot facing The Fairway. Although landscape features and lighting are noted on the plan, no landscape plan was included in our review set so we cannot comment on those elements. As required by Township regulations, a landscape plan prepared by a Landscape Architect should be submitted for review.

To support the Township's [Ready for 100](#) and [Climate Collaborative](#) resolutions and [Master Tree Action Plan](#) we recommend the applicant consider landscaping enhancements, including the planting of native trees, shrubs and grasses throughout the entire site, including within the existing and proposed parking lot islands and in buffer areas along abutting properties and along The Fairway.

Designing parking lot islands to include bioretention elements to help filter stormwater runoff from the large impervious parking areas should also be considered as part of the overall stormwater management systems being proposed. The Montgomery County Planning Commission's [Guide for Sustainable Green Parking Lots](#) is an excellent reference for natural stormwater control measures. We support the emphasis on using deep rooted native vegetation where possible. These landscaping improvements can help mitigate stormwater runoff

volume, improve water quality and habitat benefits. These are in addition to the shading and aesthetic benefits these landscaping features provide for shoppers and employees. EAC members noted that this site should be considered for other energy and sustainability features such as solar canopies.

The site seems to have excessive parking per ordinance standards. The EAC recommends that portions of the parking area that are not actively used be considered for retrofitting with pervious paving or permeable grass paver systems which will allow infiltration but retain structural ability to support parked vehicles. These features provide additional stormwater and water quality benefits.

The EAC recommends that all lighting fixtures proposed for the site be [dark sky](#) compliant to minimize glare, light pollution and protect the night environment.

We also encourage the applicant to include electric vehicle conduits or charging stations, to expand the electric vehicle infrastructure in the community.

Thank you for your consideration of our comments and recommendations and please let us know if you have any questions.

Respectfully submitted,

*Susan S. Myerov*

Susan Myerov,  
Co-Chair, Abington Township EAC

cc: Christopher Christman  
Michael Narcowich  
Tim Clark  
Planning Commission Members  
EAC Members  
Abington Shade Tree Commission Members



October 1, 2024

Langan Engineering  
Attn: Theresa Holmes

Re: Water Availability  
901 Old York Rd  
Abington Twp, Montgomery County

In response to your request, this letter will serve as confirmation that the above referenced property is situated within Aqua Pennsylvania Inc. service territory.

Domestic and fire water service is available to this property and will be provided in accordance with Aqua Pennsylvania, Inc. Rules and Regulations. For further details, visit [www.aquaamerica.com](http://www.aquaamerica.com).

***Regarding capacity for domestic and fire service for this area, flow data information can be obtained upon written request to our Control Center at [SEPAflowrequest@aquaamerica.com](mailto:SEPAflowrequest@aquaamerica.com). Include the address with town or township and the nearest intersecting street.***

This letter expires one year from the date of issue.

Should you have any further questions or need to request an application for service, contact me at (610) 541-4160 or [dlciotti@aquaamerica.com](mailto:dlciotti@aquaamerica.com).

Regards,

A handwritten signature in black ink that reads "Deanna L. Ciotti". The signature is written in a cursive style.

Deanna L. Ciotti  
New Business Administrator - Services  
Aqua Pennsylvania, Inc  
762 W. Lancaster Ave  
Bryn Mawr, PA 19010  
O: 610.541.4160



## WASTEWATER DEPARTMENT

---

*George Wrigley, Director*

August 18, 2025

Ms. Theresa Holmes  
Langan Engineering & Environmental Service, Inc,  
1818 Market Street, Suite 3300  
Philadelphia, PA 19103

RE: Proposed Renovations to Noble Town Center at 901 Old York Road: Sanitary Sewer Availability

Dear Ms. Holmes:

The Township of Abington Wastewater Utilities Department has reviewed your letter request and the site Utility Plan CU-101, including the existing features and proposed alterations, dated August 13, 2025, in regards to your request for verification of sanitary sewer service availability at the redevelopment site.

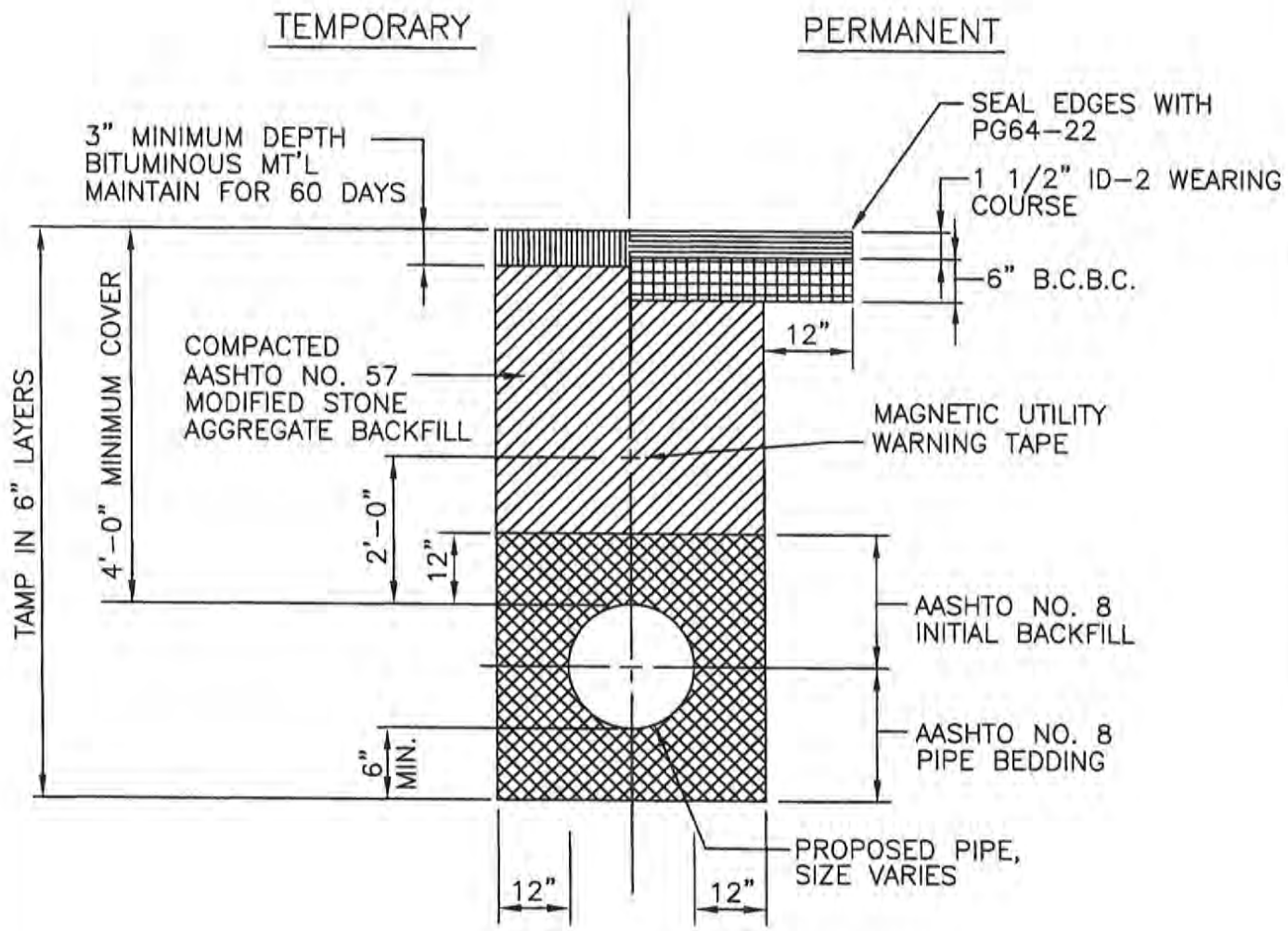
The building at the site has an existing sanitary sewer connection, which is required to be utilized for sanitary sewer disposal for the proposed renovated building. Any renovations or additions to the existing buildings will be required to utilize the existing sanitary sewer laterals and collection system piping systems, which have sufficient capacity. Sanitary flows from the site are conveyed by the Rydal Pumping Station to the Philadelphia Sanitary Interceptor. Since it is proposed to maintain the space as retail, Sanitary Sewage Facilities Planning will not be required. If the existing buildings are expanded or the proposed use is modified, sewage facilities planning submission may be required. I have also enclosed construction details for your use.

Should you have any questions or require any additional information, please contact me at 215-884-8329 or email at [gwrigley@abingtonpa.gov](mailto:gwrigley@abingtonpa.gov).

Sincerely,

George Wrigley, Director  
Abington Wastewater Utilities Department

Enclosures



ALL WORK TO BE DONE IN ACCORDANCE WITH PADOT PUBLICATION 408

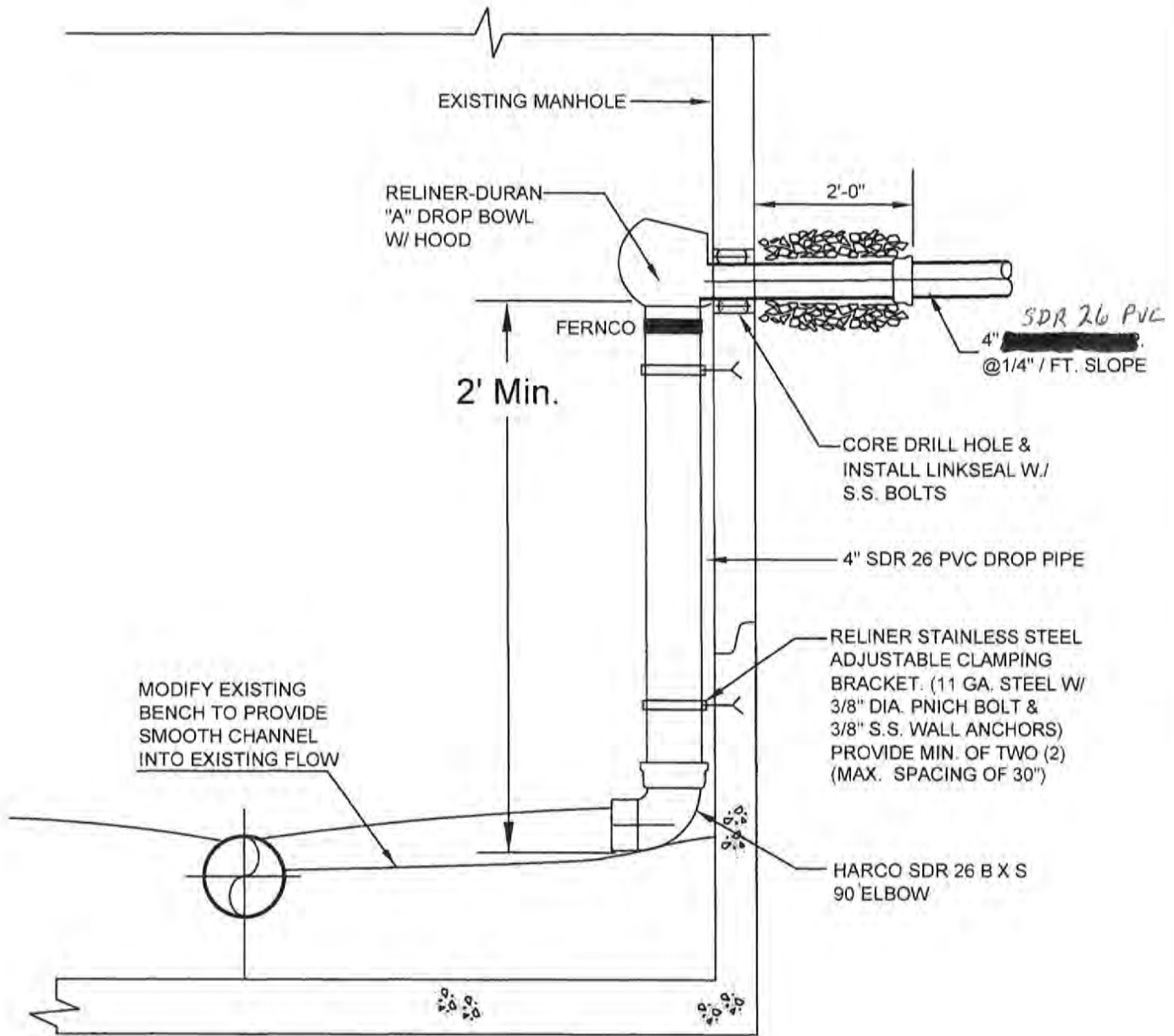
Township of Abington  
STANDARD DETAIL - SANITARY SEWER

BACKFILL AND PAVEMENT RESTORATION  
DETAIL FOR STATE/TWP ROADS

DATE:  
OCTOBER 2015

DETAIL:

NOTE: WHEN THE DISTANCE BETWEEN THE INVERT OF THE PROPOSED LATERAL AND THE SPRING LINE OF THE EXISTING SEWER IS LESS THAN 24", THE PROPOSED LATERAL SHALL CONNECT INTO THE MANHOLE AT THE SPRING LINE ELEVATION.



Township of Abington  
STANDARD DETAIL - SANITARY SEWER SYSTEM

4" LATERAL CONNECTION TO  
AN EXISTING SANITARY MANHOLE

DATE:  
SEPT. 2015

DETAIL:  
27

4 inch PVC 2-way cleanout Tee



## WASTEWATER DEPARTMENT

*George Wrigley, Director*

September 19, 2025

Mr. Erik Kelly  
 Paramount JSM at Jenkintown, LLC  
 1195 Route 70, Suite 2000  
 Lakewood, NJ 08701

RE: Redevelopment of 901 Old York Road – South Parking: Sanitary Sewer Review

Dear Mr. Kelly:

The Township of Abington Wastewater Utilities Department has reviewed the Minor Land Development Plan Set consisting of Sheet 1 to Sheet 18, prepared by Langan Engineering and Environmental Services, Inc. dated August 12, 2025, in regards to sanitary sewer service.

The site consists of an existing building that has the Pet Smart retail store and a former Bed Bath and Beyond retail store, which are served by existing sanitary sewers located within the development property. The existing sanitary sewer that is indicated on Sheet No. 17 of 18, "CU-101, Utility Plan" is private to the property, has adequate capacity, and is available and required to be utilized for sanitary sewer disposal for all units within the proposed renovated building. Sanitary flows from the site are conveyed along the Fairway and Valley Road to the Abington public sanitary Rydal Pumping Station and then to the Philadelphia Water Department's (PWD) Pennypack Interceptor and treated at their Northeast Water Pollution Control Facility. Since the sanitary flows are not anticipated to increase from previous uses, a PaDEP Sewage Facilities Planning Mailer request is not required. If the proposed units will be renovated for higher water use and sanitary discharges, an evaluation will be required to determine if and the quantity of additional sanitary flows anticipated.

### **Sanitary Sewer comments:**

Utility Plan CU-101 (Sheet 17 of 18):

1. Labels should be added to the plan sheet to indicate the type of existing pipe, references to details and various pipe materials and construction requirements. See the attached marked up Sheet 17 of 18 for specific requirements.
2. The existing sanitary sewer pipe and cleanout shall be cut and capped adjacent to the building and at the existing manhole.
3. Calculations to size the proposed grease trap should be submitted and a detail provided within the plans.



## WASTEWATER DEPARTMENT

*George Wrigley, Director*

Utility Notes & Details CU-501 (Sheet 18 of 18):

1. The "Sanitary Cleanout" detail on the sheet shall be removed and replaced with the current Abington Township Detail No. 38. (see enclosed copy)
2. Detail No. 25, Lateral Connection to Existing Sewer Main, and Detail No. 27, 4" Lateral Connection to An Existing Sanitary Manhole" shall be added to the sheet. (see enclosed copies)

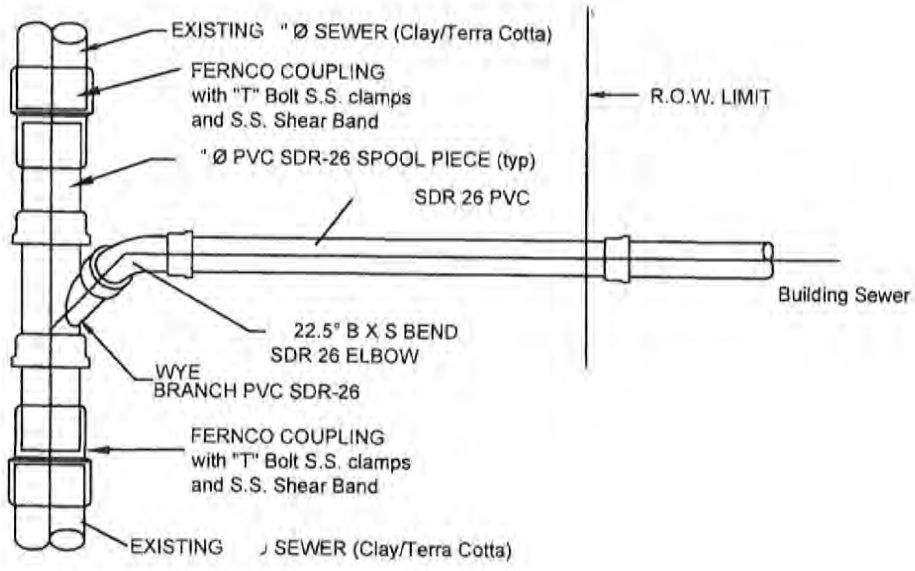
Should you have any questions or require any additional information, please contact me at 215-884-8329 or email at [gwrigley@abingtonpa.gov](mailto:gwrigley@abingtonpa.gov).

Sincerely,

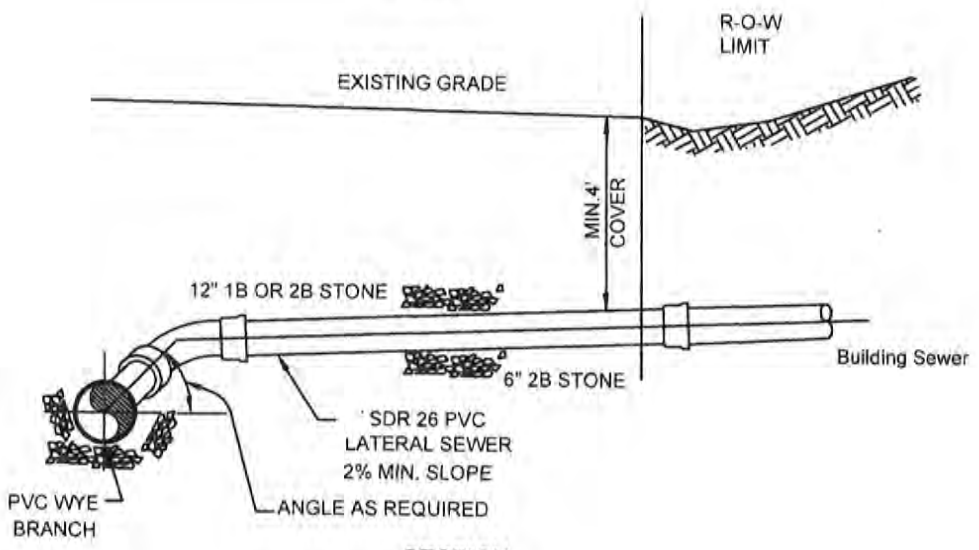
George Wrigley, Director  
Abington Wastewater Utilities Department

pc: Theresa Castorina, Abington Executive Assistant to the Manager  
Christopher Platz, Abington Director of Fire Services & Code  
Khaled Haasan, PE. Pennoni  
Allison Lee, PE., Pennoni

Enclosures



PLAN



SECTION

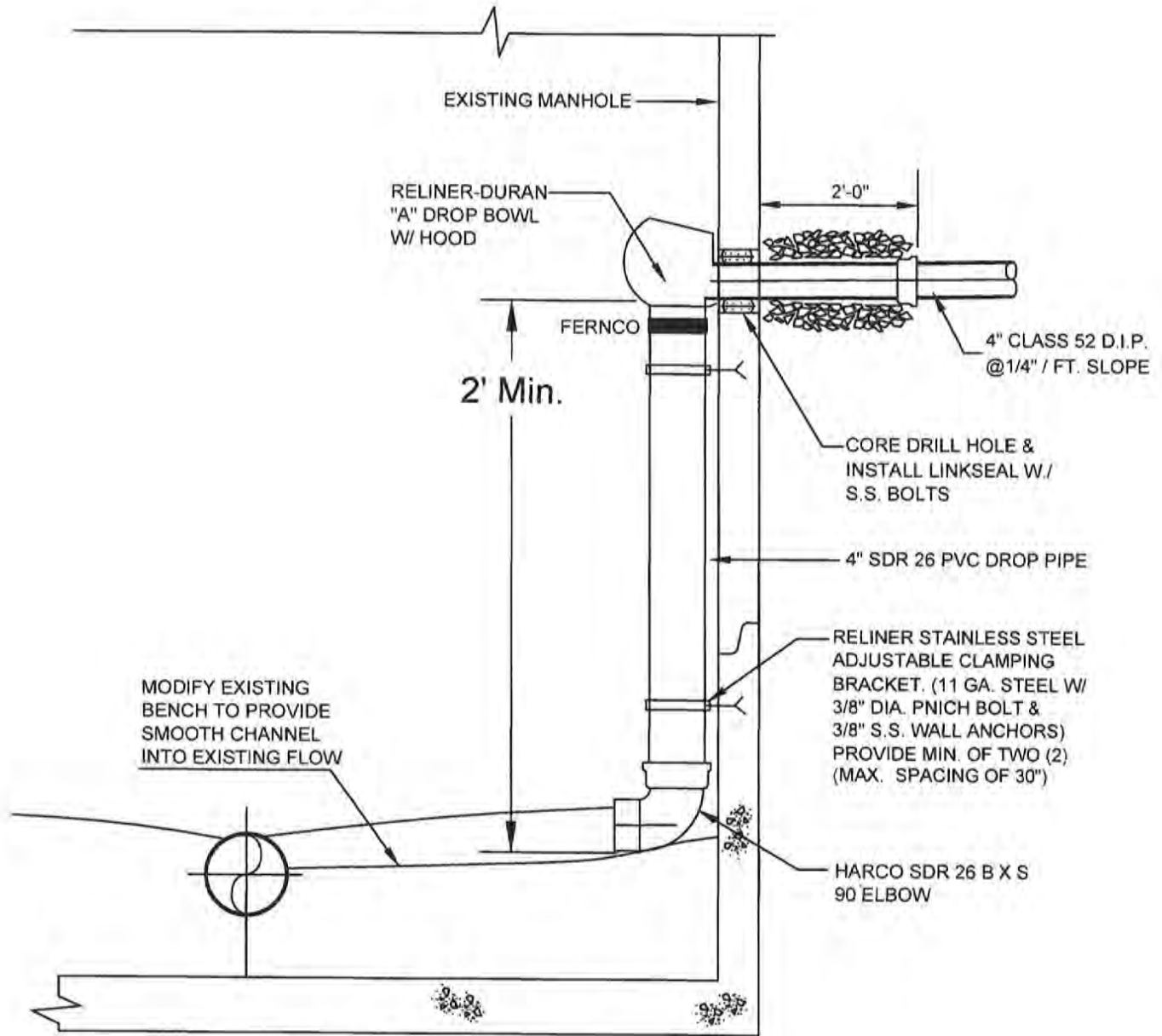
Township of Abington  
STANDARD DETAIL - SANITARY SEWER

LATERAL CONNECTION TO EXISTING  
CLAY OR TERRA COTTA SEWER MAIN

DATE:  
OCTOBER 2015

DETAIL:  
25

NOTE: WHEN THE DISTANCE BETWEEN THE INVERT OF THE PROPOSED LATERAL AND THE SPRING LINE OF THE EXISTING SEWER IS LESS THAN 24", THE PROPOSED LATERAL SHALL CONNECT INTO THE MANHOLE AT THE SPRING LINE ELEVATION.



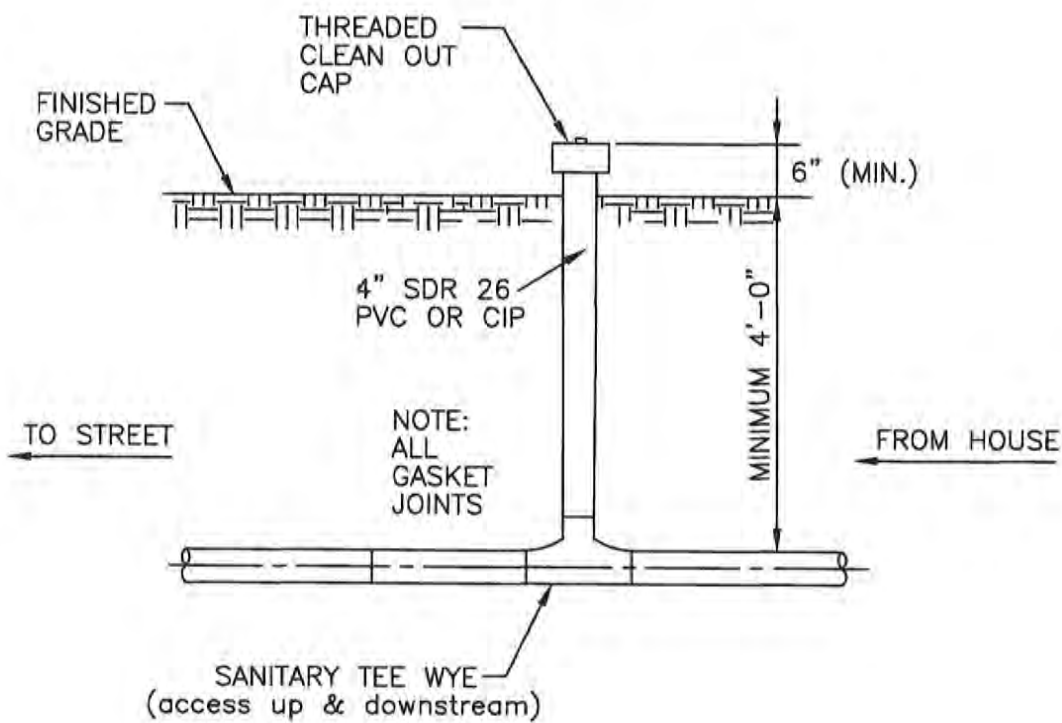
Township of Abington  
STANDARD DETAIL - SANITARY SEWER SYSTEM

4" LATERAL CONNECTION TO  
AN EXISTING SANITARY MANHOLE

DATE:  
SEPT. 2015

DETAIL:  
27

NOTE:  
CAPS TO REMAIN ABOVE GRADE AT ALL  
TIMES DURING & AFTER INSTALLATION.



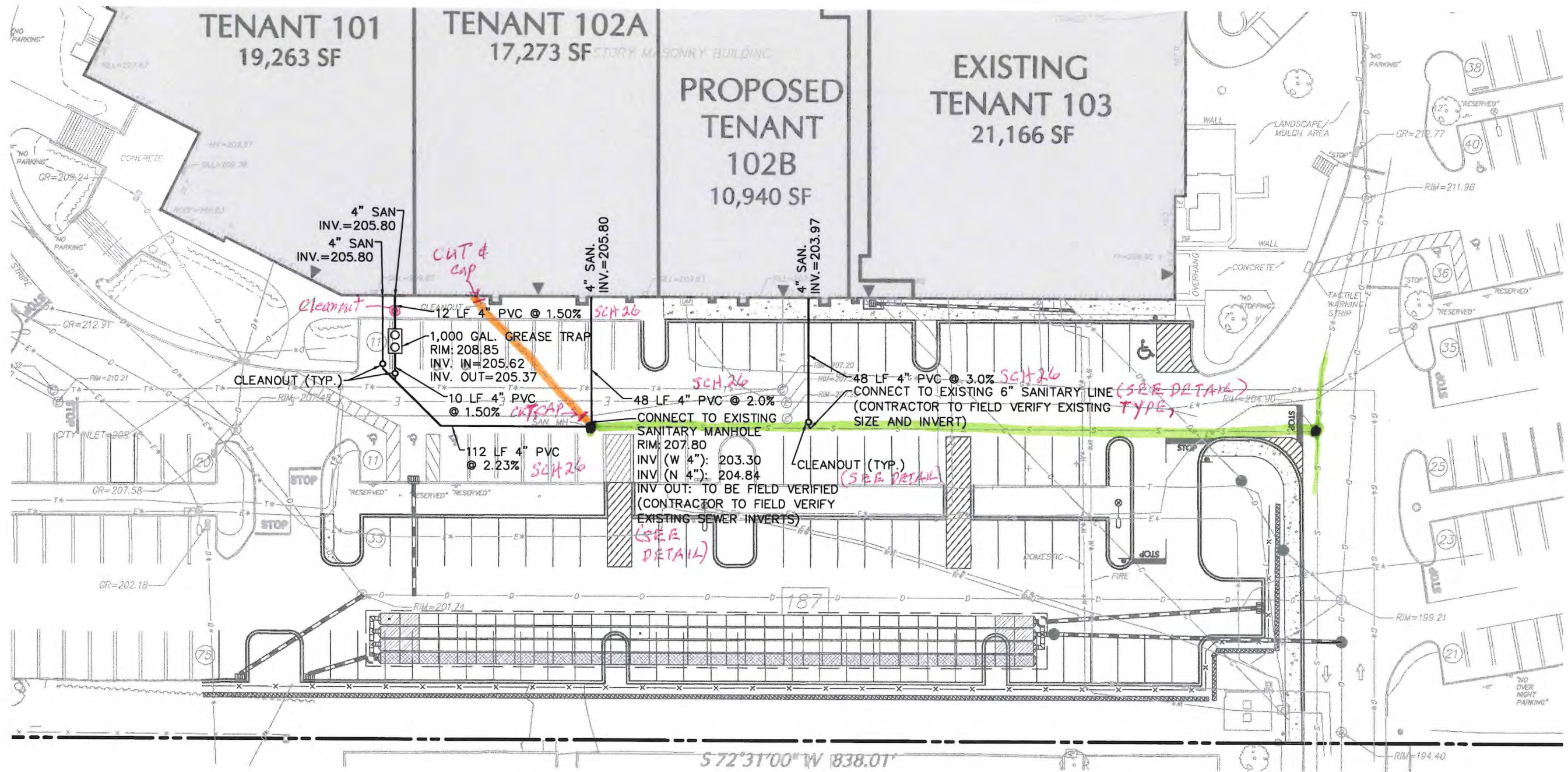
Township of Abington  
STANDARD DETAIL - SEWER SYSTEM

TYPICAL BUILDING SEWER CLEANOUT ASSEMBLY

DATE:  
JANUARY 2016

DETAIL:  
38

Abington Twp Comments - Sanitary Sewer



AUG. 12, 2025  
CU-101

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# POST-CONSTRUCTION STORMWATER MANAGEMENT NARRATIVE

for

## Noble Town Center Redevelopment South Parking Improvements 901 Old York Road Abington Township, Montgomery County, PA, 19046

*Prepared For:*

Paramount JSM At Jenkintown, LLC.  
1195 Route 70, Suite 2000  
Lakewood, NJ 08701

*Prepared By:*

Langan Engineering and Environmental Services, Inc.  
1818 Market Street, Suite 3300  
Philadelphia, Pennsylvania 19103



---

Brian M. Conlon, PE  
Professional Engineer License No. 061782

**LANGAN**

12 August 2025  
220154401



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## **INTRODUCTION**

This report addresses the engineering design of the stormwater management, the Best Management Practices (BMPs), and storm drainage conveyance systems for the proposed Noble Town Center Redevelopment – South Parking Improvements, situated in Abington Township, Montgomery County, Pennsylvania. The BMPs manage the stormwater quality, volume and peak rates of discharge from the development. The supporting calculations have been performed in accordance with the Subdivision & Land Development Ordinance from Abington Township, the Pennypack Creek Watershed Flood Management, and the Pennsylvania Department of Environmental Protection (PADEP).

## **PROJECT SUMMARY**

The subject property is comprised of ±17.9 acres located at 901 Old York Road, Abington Township, Montgomery County, Pennsylvania. The site is the current location for the Noble Town Center Shopping Center, associated parking, and infrastructure (Figure 1). The site is currently accessed via driveways from Old Yorke Road and The Fairway.

This project proposes the redevelopment of a portion of the existing southern parking lot. These improvements will decrease pervious area by approximately 418 SF with a limit of disturbance of 0.83 acres. A stormwater conveyance system with a subsurface infiltration basin is proposed to manage the proposed site design in accordance with applicable regulations.

### **Plan Preparer**

The Erosion and Sediment Control Plan has been prepared under the direction of Brian M. Conlon, P.E., LEED AP of Langan Engineering and Environmental Services Inc., Philadelphia, Pennsylvania. Langan is a full-service civil engineering consulting firm established in 1970. A record of training and experience (standard E&S worksheet 22) for Mr. Conlon is included in the appendix.

### **Pre-Construction Conditions And Present Uses**

#### Receiving Waters

The site is located within the Mid-Atlantic Region, Delaware Sub Region, in the following watersheds:

- Lower Delaware HUC 6 Watershed;
- Lower Delaware HUC 8 Watershed;
- Pennypack Creek-Rancocas HUC 10 Watershed; and,
- Lower Pennypack Creek HUC 12 Watershed.

The nearest surface waters to the project is Tributary 02438 to Meadow Brook which is mapped with an existing uses of trout stocking (TSF) waters. This tributary is considered impaired by way of Urban Runoff/Storm Sewers Siltation. There is currently no total maximum daily load associated with this tributary.

#### Existing Conditions and Present Uses (last 5 years)

A review of historic aerial images and archived plan documents show that the site was previously undeveloped grassland up until the 1950s. The current shopping center was constructed in the mid-1950s.

#### Past Uses (past 50+ years)

The land uses for the past 50 years were agricultural and commercial retail. Within the past 5 years, the site has been used as commercial retail shopping center.

### **Geologic Formations and Soil Conditions**

As determined by a search of the Natural Resources Conservation Service (NRCS) Web Soil Survey database, the site soils are considered unrated. The site is comprised of Urban Land and Urban Land-Penn Complex Soils. As these soils are unrated, a Hydrologic Soil Group of "D" was assumed for this project's design.

#### Potential for Geologic or Soil Conditions to Cause Pollution during Construction

Any earth disturbance has the potential to cause pollution in the form of sediment in the air and water. The erosion and sedimentation control design addresses this potential for pollution.

### **STORMWATER MANAGEMENT SUMMARY**

The stormwater management design for the site was prepared in accordance with the Neshaminy Creek Stormwater Management Ordinance, and the Pennsylvania Stormwater Best Management Practices Manual.

#### **Introduction**

This engineering design of the proposed stormwater management is summarized by the following strategies:

##### Preserve Receiving Stream Quality

The site was designed to preserve the integrity of the stream channels and maintain and protect the physical, biological and chemical qualities of the receiving stream and to minimize any increase in stormwater runoff volume.

##### Prevent an Increase in Stormwater Runoff Rate

The site was designed to prevent an increase in the rate of stormwater runoff by limiting the disturbed area, limiting proposed impervious areas, and utilizing a proposed subsurface

infiltration basin.

Minimize Any Increase in Stormwater Runoff Volume

The limited disturbance and impervious area which is routed into the proposed subsurface infiltration basin will mitigate the increased stormwater runoff volume.

Minimize Impervious Areas

The proposed impervious areas were minimized to the maximum extent possible for the functionality of the final site.

Maximize Protection of Existing Drainage Features and Existing Vegetation

The stormwater management design maximizes the protection of existing drainage features to the extent possible.

Minimize Land Clearing and Grading

The proposed design considers existing grades and land type to minimize land clearing and grading.

Minimize Soil Compaction

The site was designed to minimize soil compaction by as much as possible in pervious areas.

Utilize BMPS That Prevent or Minimize Changes in Stormwater Runoff

The infiltration basin can remove total suspended solids, phosphorous and nitrogen from the runoff.

**Abington Township Stormwater Regulations**

The site is in the Pennypack Creek Watershed and the Stormwater Management District B. According to the current Abington Township Regulations, there are five main criteria for design:

Groundwater Recharge Requirements.

Infiltration BMPS intended to receive runoff from developed areas shall be selected based on suitability of soils and site conditions and shall be constructed on soils that have the following characteristics.

- (a) A minimum soil depth of 24 inches between the bottoms of the infiltration BMPs and bedrock or other limiting zones such as clay layers.
- (b) An infiltration rate sufficient to accept the additional stormwater load (stormwater load is the quantity above the pre-project condition quantity) and dewater completely as determined by field tests conducted by the applicant's qualified person.
- (c) All open-air infiltration facilities shall be designed to completely infiltrate the recharge (infiltration) volume ( $Re_v$ ) within three days (72 hours) from the end of the design storm.
- (d) All open-air infiltration facilities shall be designed to completely infiltrate the recharge (infiltration) volume ( $Re_v$ ) within three days (72 hours) from the end of the design storm.
- (e) Pretreatment shall be provided prior to infiltration.

Where practicable and appropriate the recharge volume shall be infiltrated on site. The recharge volume shall be equal to 1.0 inch of runoff (I) over all proposed impervious surfaces. The infiltration basin will be designed to infiltrate the required recharge volume.

### Water Volume Control

The project has regulated areas greater than one acre, therefore, Control Guideline 1 was used. This guideline states the following:

- Do not increase the post-construction total runoff volume for all storms equal to or less than the 2-year/24-hour event.
- Existing (pre-construction) non-forested pervious areas must be considered meadow (good condition) or its equivalent.
- Twenty (20) percent of existing impervious area, when present, shall be considered meadow (good condition) in the model for existing conditions for redevelopment.

The peak rate control guideline requires that the proposed project not increase the peak of discharge for the 1-year through 100-year storm events.

Water quality control demonstrates that pollutant loads for Total Suspended Solids (TSS), Total Phosphorus (TP) and Total Nitrogen (TN) following construction will not exceed pre-construction pollutant loads for storms up to and including the 2-year/24-hour storm.

The water quality requirement will be met by routing the required runoff volume through the proposed infiltration basin and will drain in not less than 24 hours and not more 72 hours from the start of the 2-year/24-hour design storm.

### Water Quality Requirements

Developed areas shall provide adequate storage and treatment facilities necessary to capture and treat stormwater runoff. The recharge volume, previously discussed, may be a component of the water quality volume. If the calculated recharge volume is less than the water quality volume, the remaining water quality volume may be captured and treated by methods other than infiltration best management practices. The water quality volume (WQv) is the storage capacity needed to capture and treat a portion of stormwater runoff from the developed areas of the site. The following calculation is used to determine the water quality storage volume in cubic feet.

$$WQ_v = [(P)(Rv)(A)]/12$$

Where:

- WQ<sub>v</sub> = Water quality volume (acre-feet)
- P = (in/d)
- A = Area of the project contributing to the water quality BMP (acres)
- R<sub>v</sub> = 0.05 = 0.009(1) where (1) is the percent of the area that is impervious surface (Impervious surface = A<sub>imp</sub>/A<sub>total</sub>)

An asterisk (\*) in equations denotes multiplication.

The water quality volume requirement will be met by providing more than the required volume as static storage below the lowest orifice in the outlet control structure. This will ensure the entire water quality volume is infiltration.

### Streambank Erosion (Channel Protection)

In addition to the control of water quality volume, the primary requirement is to design a BMP to detain the proposed conditions 2-year, 24-hour storm event to the existing conditions 1-year flow using the SCS Type II distribution. Provisions shall be made so that the proposed condition 1-year, 24-hour storm even takes at least 24 hours to drain from the facility from a point when the maximum volume of water from the 1-year, 24-hour storm event is captured. Release of water can begin at the start of the storm.

The outlet control structure is designed such that the 2-year, 24-hour storm event will be reduced to the equivalent existing 1-year, 24 hour storm event.

### Stormwater Peak Rate Control and Management Districts

The Flood Control requirement for District B of the Pennypack Creek Watershed stipulates that a development project match certain peak rates requirements from the pre-construction to post-construction conditions during certain storm events. The required peak rate reductions for the Pennypack Creek Watershed are as follows.

Table 409.1P  
Peak Rate Control Standards by Stormwater Management District in the Pennypack Creek Watershed

District	Proposed Condition Design Storm	Reduction	Existing Condition Design Storm
A	2-year	Reduce to	1-year
	5-year		5-year
	10-year		10-year
	25-year		25-year
	50-year		50-year
	100-year		100-year
B	2-year	Reduce to	1-year
	5-year		5-year
	10-year		10-year
	25-year		25-year
	50-year		25-year
	100-year		50-year

The outlet control structure is designed to meet the design storm reductions of District B.

## **Pennsylvania Department of Environmental Protection Regulations**

This project does not exceed an earth disturbance of greater than one acre and, therefore, a NPDES permit is not required.

### **Pre-construction Stormwater Management**

The site runoff is primarily conveyed to the existing catch basins on site which drain off-site to existing stormwater conveyance systems.

### **Pre-construction Watersheds**

The pre-construction watersheds are delineated on CG-301. The site is made up of three watersheds which are evaluated at one analysis points.

- DA-1 – This watershed represents disturbed areas that will be captured and managed by the proposed subsurface infiltration basin.
- DA-2 – This watershed represents disturbed areas that will not be captured in the proposed condition.
- DA-3 – This watershed represents undisturbed areas that will be captured and managed by the proposed subsurface infiltration basin.

### **Post-construction Watersheds**

The proposed watersheds are delineated on CG-302. These watersheds are evaluated at the same analysis point as the pre-construction conditions.

- DA-1 – This watershed represents disturbed areas that will be captured and managed by the proposed subsurface infiltration basin.
- DA-2 – This watershed represents disturbed areas that will not be captured in the proposed condition.
- DA-3 – This watershed represents undisturbed areas that will be captured and managed by the proposed subsurface infiltration basin.

### **Proposed Stormwater Management Design**

The proposed stormwater management will mimic the pre-construction site's drainage patterns. The site grading has been minimized to limit earth disturbance. Sediment from site soils will be minimized by erosion and sedimentation control measures.

The stormwater management design includes new piping, inlets, and a proposed subsurface infiltration basin.

## **Proposed Stormwater Management Practices (SMP's)**

### *Subsurface Infiltration Basin*

The proposed inlets include a sump and trap to remove floatables, trash, oil and debris. The proposed infiltration basin will help to reduce total suspended solids, fine silt-sized particles, and a high percentage of particulate-bound pollutants; including phosphorus, nitrogen, metals and hydrocarbons.

## **Modeling of the Stormwater Management System**

This study was prepared using the Soil Conservation Service (SCS) Method and methods contained in the USDA Soil Conservation Service's Publication TR-55 "Urban Hydrology for Small Watersheds" (TR-55). TR-55 outlines procedures for calculating peak rates of runoff resulting from precipitation events and procedures for developing runoff hydrographs. Using the SCS Soil Survey, the soils within the watershed were unrated and hydrologic soil groups D was used for design. The SCS classification system evaluates the runoff potential of a soil according to its infiltration and transmission rates. "A" soils have the lowest runoff potential and "D" soils have the greatest runoff potential.

HydroCAD Software Solutions LLC 2024 software was used to analyze the site's hydrology. Pre- and post-construction runoff rates were analyzed for the design storms to determine that the required design criteria were met. Data included in the model was taken from the following sources.

## **Curve Numbers**

The runoff curve number is a land-sensitive coefficient that dictates the relationship between total rainfall depth and direct storm runoff. Based on the coverage of soil groups and land use in the watershed, a CN was identified for each subarea for post-construction conditions. The relative stormwater runoff rates and volumes of pervious and impervious surfaces were calculated separately for each watershed and then combined, and the resultant volume was routed through the systems. The curve numbers were taken from the Table E-1 in appendix E of the stormwater management regulations in the Abington Township Stormwater Ordinance.

## **Time of Concentration**

The time of concentration is defined as the time for runoff to travel from the hydraulically most distant point in the watershed to a point of interest. Values of the time of concentration were determined for pre- and post-construction conditions based on land cover and slope of the flow path using methods described in TR-55. Note that because of the short flow lengths and vertical pipes associated with roof runoff, five minutes (which is the minimum time of concentration value recommended in TR-55) was used for the pre- and post-construction areas.

## **Design Storm**

The design storm used for this study is the 24-hour SCS Type II cumulative rainfall distribution. A minimum time of concentration value of five minutes was used in the modeling.

## **Rainfall Totals and Intensity-Duration-Frequency**

Rainfall data was taken from the NOAA 14 Precipitation-Frequency Atlas of the United States (2004, revised 2006).

## **MODELING RESULTS**

### **Groundwater Recharge**

The required recharge volume was calculated using the total impervious area within the limits of the earth disturbance. For the proposed site, this area is 35,393 SF. The recharge volume is then calculated as this multiplied by 1/12. The calculated recharge volume for this project is 2,365 CF. The infiltration basin has been designed such that this volume is statically stored below the lowest orifice in the outlet control structure. This will ensure that this volume is recharged into the groundwater via infiltration.

### **Water Volume Control Requirements**

The Design Storm Method (CG-1 in the BMP Manual) was used to show compliance with water volume control requirements. Pre-development runoff was calculated considering non-forested pervious areas as meadow. Additionally, 20% of existing impervious area, was considered meadow for the existing conditions. The total runoff volume was then calculated for the proposed and pre-development conditions. The difference in volume between these two storms was calculated as 243 CF. Because the basin is designed to statically store 2,596 CF of runoff, the volume reduction required will be met.

### **Water Quality Requirements**

The required water quality volume (WQv) was calculated using the formula in Abington Township Stormwater Management Code Section 142-407. The WQv is calculated using the area of the project contributing to the water quality BMP and the percent of the area that is impervious surface. The required WQv was determined to be 2,365 CF. This volume will be statically stored below the outlet control structures lowest orifice and infiltrated into the ground.

### **Stream Bank Erosion (Channel Protection)**

The design of the subsurface infiltration basin meets the requirements of this section. The minimum orifice size in the outlet structure is larger than 3 inches. Additionally, the basin is designed such that the proposed 1-year, 24-hour storm event takes at least 24 hours to drain.

### **Peak Rate Calculations**

The 1-, 2-, 5-, 10-, 25-, 50-, and 100-year storms have been assessed for the site to model how the proposed infiltration basin will operate during storm events.

The tables below provide a comparison of pre-construction and post-construction peak runoff rates at both points of analysis.

Point of Analysis			
Storms	Pre-Development (cfs)	Required Rate (cfs)	Point of Analysis
1	2.95	N/A	
2	3.65	2.95	0.76
5	4.72	3.65	1.31
10	5.62	4.72	1.88
25	5.92	5.62	3.59
50	6.03	6.03	5.34
100	6.23	6.03	7.00

### Infiltration Basin Calculations

The following are the results of the post-construction model being routed through the proposed infiltration basin.

Subsurface Infiltration Basin				
Storms	Inflow (cfs)	Outflow (cfs)	Peak Ponding Elevation (ft)	Volume Infiltrated (cf)
1	2.77	0.39	199.21	4,815
2	3.41	0.72	199.38	4,984
5	4.38	1.13	199.67	5,180
10	5.20	1.54	199.93	5,300
25	6.39	3.31	200.15	5,425
50	7.40	4.91	200.29	5,501
100	8.49	6.43	200.40	5,563

### Off-Site Discharge Analysis

The applicant has demonstrated that the stormwater discharge from the site will not cause accelerated erosion or damage to off-site areas or to the project area down slope of the limit of disturbance through the implementation of an infiltration basin and a reduction to the portion of the site that drains freely to adjacent properties. Stormwater runoff discharges.

### Thermal Impacts

Thermal impacts after construction will be minimized by the management of the proposed impervious surface. The entirety of the project areas proposed impervious areas will be directed into a proposed inlets, which will drain to the proposed infiltration basin. The runoff will be detained before being infiltrated into the ground. The increased detention time and the cooler temperature below ground will help to mitigate potential increases in stormwater runoff temperature.

## SMP INSPECTION AND MAINTENANCE

All inspections and maintenance activity must be maintained for all components. Records of all inspection and maintenance should be maintained for all components of the stormwater system.

### Outlet Control Structure Maintenance

Ongoing Activity	Frequency
Inspect outlet control structures after several storms to ensure that they are functioning properly and that there are no erosion problems developing.	As Needed
Identify any sources of sediment contamination and control when in situ soil is exposed or erosion channels are present.	As Needed
Maintain and cut back vegetation directly surrounding outlet control structures if impairing function of SMP.	As Needed
Clean out leaves, trash, and debris, from all structures, such as grates and orifices (Note: consult with professional vacuum cleaning service if subsurface pipes, including underdrains, appear to be clogged).	As Needed
Inspect for sediment and debris build-up. Sediment build-up exceeding two inches in depth or that begins to constrict the flow path must be removed.	Quarterly
Maintain records of all inspections and maintenance activity.	Ongoing

### **Inlets and Manholes Maintenance**

Inlets should be inspected quarterly and cleaned out at least annually. Debris from the sump in the inlets and manholes should be collected and disposed of properly.

### **Subsurface Infiltration Basin Maintenance**

<b>Early Maintenance Activity</b>	<b>Frequency</b>
Inspect erosion control and flow spreading devices until soil settlement and vegetative establishment of contributing areas has occurred.	Biweekly
Inspect inlet controls, outlet structures, and storage areas for trash and sediment accumulation.	Monthly for the first year after installation to determine ongoing maintenance frequency

<b>Ongoing Maintenance Activity</b>	<b>Frequency</b>
Regularly clean out gutters and catch basins to reduce sediment load to infiltration SMP. Clean intermediate sump boxes, replace filters, and otherwise clean pretreatment areas in directly connected systems.	As Needed
Remove sediment and debris from subsurface infiltration SMP sedimentation chamber, as applicable, when the sediment zone is 3/4 full.	As Needed
Remove sediment and debris from pipe/vault systems. Sediment depth is not to reach a maximum depth of four inches below the SMP's outlet invert elevation. Removal of sediment from grid systems must be per manufacturer's recommendations or as per the site-specific maintenance schedule.	As Needed
Inspect subsurface infiltration facility and control structures.	Quarterly
Remove floating debris and accumulated petroleum products.	Quarterly
Evaluate the drain down time of the SMP after a storm of at least one inch to ensure an SMP drain down time of less than 72 hours.	Ongoing

Maintain records of all inspections and maintenance activity.	
---	--

### **Construction Inspection**

Inspection during critical stages of implementation of PCSM Plan for which a licensed professional or designee will be present on site:

- Subsurface Infiltration Basin
  - Excavation of basin
  - Installation of stone and pipes
  - Placement of outlet control structure

During construction, contractor should refer to the Construction Certification Forms. Photos, receipts, measurements and notes must be recorded.

## **STORM SEWER COLLECTION SYSTEM DESIGN**

### **Design Criteria**

The on-site subsurface collection system was designed to convey a 10-year, 24-hour storm event.

### **Design Methodology**

The proposed storm sewer system was designed using the rational method for estimating peak runoff for a 10-year storm event. The site was divided into sub-areas, each contributing runoff to an individual catch basin, as delineated on CG-303. Values for drainage area, time of concentration, and a runoff coefficient was calculated for each contributing sub-area.

Values for time of concentration were chosen based on land cover of each individual catch basin drainage area. While the time of concentration was calculated for each inlet area, a minimum value of 5 minutes was used for each area, as stated by TR-55, Urban Hydrology for Small Watersheds. The average runoff coefficient, which is the ratio of peak runoff rate to the average rainfall rate for the period of the time of concentration, was based on land cover and the hydrologic soil condition for the specific areas. The runoff curve numbers and Rainfall Intensities were taken from Abington Township Code, Chapter 142 Stormwater Management.

Storm drainage pipes were sized based upon calculated flows utilizing Manning's equation and are verified by solving for the hydraulic grade line. Results of the storm sewer discharge are presented in Appendix B.

## **RESULTS/CONCLUSIONS**

Runoff generated from the proposed improvements is collected through inlets and conveyed through piping to an existing infiltration basin. The project meets the volume and peak rate control requirements with the existing infiltration basin.

The total amount of suspended solids in the stormwater runoff will be reduced due to pollutant removal in the infiltration basin and the sump and trap in upstream inlets.

## REFERENCES

1. Chapter 142, Stormwater Management, Township of Abington
2. Pennsylvania Best Management Practices (SMP) Manual (April 2006)
3. Pennsylvania Erosion and Sediment Pollution Control Program Manual (March 2012)
4. Urban Hydrology for Small Watersheds, Technical Release No. 55, USDA Soil Conservation Service Publication, June 1986.

\\wangan.com\data\PHL\data4\220154401\Project Data\Discipline\Site Civil\Reports\PCSM - South Parking\220154401 - Stormwater Report.doc

# FIGURES



City of Philadelphia, Bucks County, PA, State of New Jersey, Esri, HERE, Garmin, INCREMENT P, NGA, USGS; Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

<p>300 Kimball Drive 4th Floor Parsippany NJ 07054-2172 T: 973-560-4900 F: 973-560-4901 www.langan.com</p> <p>Langan Engineering &amp; Environmental Services, Inc. Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. Langan International Collectively known as Langan</p>	Project	<b>Noble Town Center</b>	Drawing Title	<b>VICINITY MAP</b>	Project No.	220154401	Figure	<b>1</b>
					Date	12/19/2024		
					Scale	1:150		
					Drawn By	Site Analyzer		
					Submission Date	12/19/2024	Sheet 1 of 4	



Source: Esri, Maxar, Earthstar Geographics, IGN, and the GIS User Community, Esri Community Maps Contributors, PSU Office of Physical Plant, City of Philadelphia, Bucks County, PA, data.pa.gov, New Jersey Office of GIS, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, Esri, DigitalGlobe, Earthstar Geographics, CNES/Airbus DS, GeoEye, USDA FSA, USGS, AeroGrid, IGN, IGP, and the GIS User Community

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 Architecture and Geology, D.P.C.  
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Project **Noble Town Center**

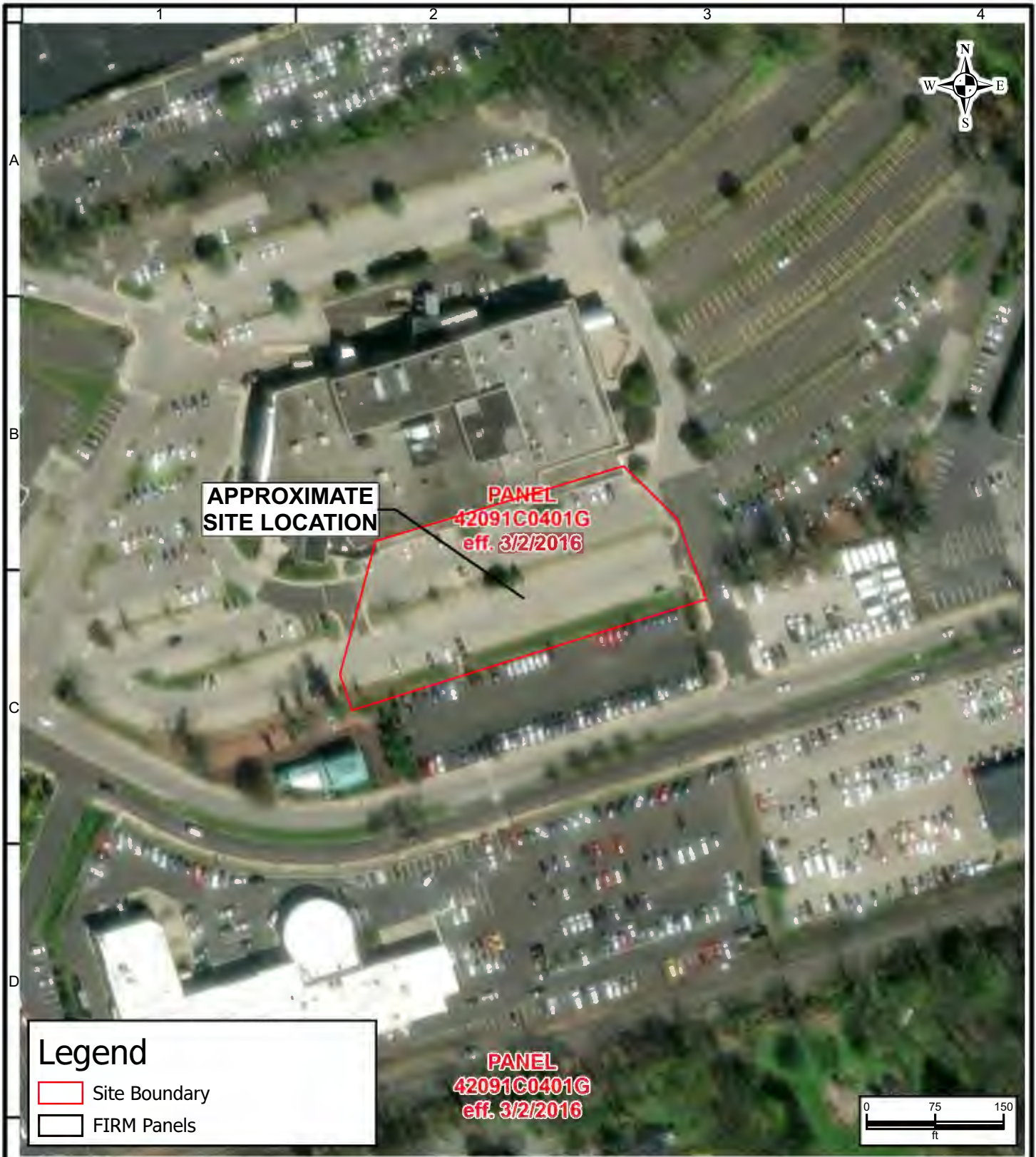
JENKINTOWN  
 COUNTY MONTGOMERY PA

Drawing Title **AERIAL**

Project No. 220154401  
 Date 12/19/2024  
 Scale 1:150  
 Drawn By Site Analyzer  
 Submission Date 12/19/2024

Figure **2**

Sheet 2 of 4

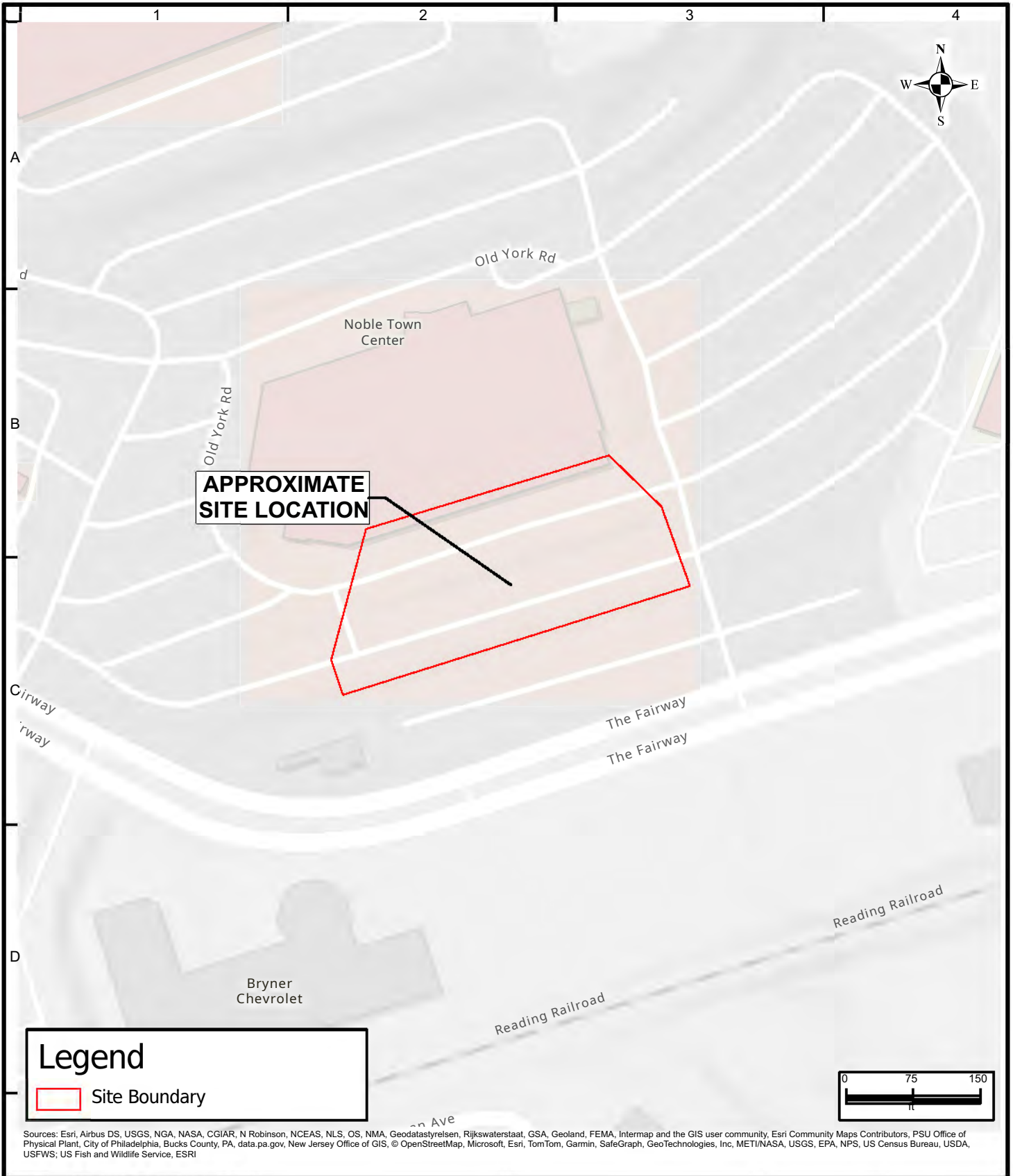


**Legend**

- Site Boundary
- FIRM Panels

Maxar; FEMA, FEMA RiskMap CDS

<p><b>LANGAN</b>          300 Kimball Drive 4th Floor          Parsippany NJ 07054-2172          T: 973-560-4900 F: 973-560-4901 www.langan.com</p> <p>Langan Engineering &amp; Environmental Services, Inc.          Langan Engineering, Environmental, Surveying, Landscape          Architecture and Geology, D.P.C.          Langan International          Collectively known as Langan</p>	<p>Project  <b>Noble Town Center</b></p>	<p>Drawing Title  <b>EFFECTIVE FEMA FIRM</b></p>	<p>Project No.          220154401</p>	<p>Figure  <span style="font-size: 2em;">3</span></p>	
					<p>Date          12/19/2024</p>
					<p>Scale          1:150</p>
					<p>Drawn By          Site Analyzer</p>
	<p>JENKINTOWN          COUNTY MONTGOMERY PA</p>		<p>Submission Date          12/19/2024</p>	<p>Sheet 3 of 4</p>	



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Project **Noble Town Center**

JENKINTOWN  
 COUNTY MONTGOMERY PA

Drawing Title **NWI WETLANDS**

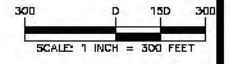
Project No. 220154401  
 Date 12/19/2024  
 Scale 1:150  
 Drawn By Site Analyzer  
 Submission Date 12/19/2024

Figure 4  
 Sheet 4 of 4



SOILS TABLE		
MAP SYMBOL	MAP NAME	HSG
UgB	URBAN LAND, 0 TO 8 PERCENT SLOPES	N/A
UgD	URBAN LAND, 8 TO 35 PERCENT SLOPES	N/A

NOTE: SOIL INFORMATION IS BASED ON WEB SOIL SURVEY OF BUCKS COUNTY, PENNSYLVANIA ADMINISTERED BY THE NATURAL RESOURCES CONSERVATION SERVICE.



<p><b>LANGAN</b> Langan Engineering and Environmental Services, Inc. 1818 Market Street, Suite 3300 Philadelphia, PA 19103 T: 215.845.8900 F: 215.845.8901 www.langan.com</p>	Project	Drawing Title	Project No.	Figure
	REDEVELOPMENT OF NOBLE TOWN CENTER	USGS SOIL SURVEY	220154401	FIG. 5
	ABINGTON TOWNSHIP MONTGOMERY COUNTY PENNSYLVANIA		Date	
			11 APRIL 2025	
			Drawn By	
			AEB	
			Checked By	
			BMC	

# **DRAWINGS**

**GENERAL SITE NOTES:**

- THE CONTRACTOR SHALL FURNISH, INSTALL, TEST AND COMPLETE ALL WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION. AS SUCH, THESE PLANS DO NOT COMPLETELY REPRESENT NOR ARE THEY INTENDED TO REPRESENT. ALL SPECIFIC INSTRUCTIONS REQUIRED FOR SITEWORK CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO CONSTRUCT ALL IMPROVEMENTS DEPICTED ON THESE PLANS IN ACCORDANCE WITH ALL APPLICABLE RULES, REGULATIONS AND LAWS IN EFFECT AT THE TIME OF CONSTRUCTION.
- THE CONTRACTOR SHALL ASSESS CONDITIONS, AND THE KIND, QUALITY AND QUANTITY OF WORK REQUIRED. THE OWNER AND ENGINEER MAKE NO GUARANTEE IN REGARD TO THE ACCURACY OF ANY INFORMATION THAT WAS OBTAINED DURING INVESTIGATIONS. THE CONTRACTOR SHALL MAKE A THOROUGH SITE INSPECTION IN ORDER TO FIELD CHECK EXISTING SITE CONDITIONS. CORRELATE CONDITIONS WITH THE DRAWINGS AND, RESOLVE ANY POSSIBLE CONSTRUCTION CONFLICTS WITH THE OWNER AND ENGINEER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL PERFORM ADDITIONAL TOPOGRAPHIC SURVEYS HE/SHE DEEMS NECESSARY, PROVIDED THEY ARE COORDINATED WITH THE OWNER. ANY CONDITIONS DEMANDED BY THE CONTRACTOR THAT DIFFER FROM THE INFORMATION SHOWN ON THE DRAWINGS THAT ARE NOT BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO THE START OF WORK SHALL NOT BE CONSIDERED GROUNDS FOR ADDITIONAL PAYMENT OR CHANGES TO THE CONTRACT DURATION, OR ANY OTHER CLAIMS AGAINST THE OWNER OR OWNER'S ENGINEER.
- THE CONTRACTOR SHALL, WHEN HE/SHE DEEMS NECESSARY, PROVIDE A WRITTEN REQUEST FOR INFORMATION (RFI) TO THE OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE, AND ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITEWORK ITEM. THE RFI SHALL BE IN A FORM ACCEPTABLE TO OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE AND ENGINEER AND SHALL ALLOW FOR A MINIMUM OF THREE WORK DAYS FOR A WRITTEN REPLY. RFIS SHALL BE NUMBERED CONSECUTIVELY BY DATE SUBMITTED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITEWORK ITEMS CONSTRUCTED DIFFERENTLY THAN INTENDED OR AS DEPICTED ON THE PLANS.
- INFORMATION RELATED TO ELEVATIONS AND PROPOSED UTILITIES (SUCH AS ROADWAY GRADES, INVERT ELEVATIONS, RIM ELEVATIONS, GATE ELEVATIONS, BUILDING FINISHED FLOOR ELEVATIONS, ETC.) MAY BE FOUND IN MORE THAN ONE LOCATION IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL SUFFICIENTLY REVIEW ALL PLANS, PROFILES AND ANY OTHER INFORMATION IN THE CONTRACT DOCUMENTS FOR CONSISTENCY PRIOR TO BID. ANY INCONSISTENCIES OR DISCREPANCIES THAT ARE FOUND BY THE CONTRACTOR OR HIS ASSIGNS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER IN WRITING, IN THE FORMAT OF AN RFI PRIOR TO BID.
- THERE ARE ADDITIONAL NOTES, SPECIFICATIONS AND REQUIREMENTS CONTAINED THROUGHOUT THE PLAN SET AS WELL AS REFERENCES TO SPECIFICATIONS FROM APPLICABLE GOVERNING AUTHORITIES AND INDUSTRY STANDARDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN, REVIEW AND ADHERE TO ALL THESE DOCUMENTS.
- CONTRACTOR IS SPECIFICALLY CAUTIONED THAT ALL CONSTRUCTION STAKEOUT FOR THIS PROJECT MUST BE COMPLETED FROM THE SITE SPECIFIC SURVEY CONTROL (HORIZONTAL AND VERTICAL) UPON WHICH THE DESIGN IS BASED. THE CONTRACTOR SHOULD NOT RELY ON RE-ESTABLISH SURVEY CONTROL BY GPS OR OTHER METHODS FOR USE IN CONSTRUCTION STAKEOUT OR ANY OTHER PURPOSE FOR THIS PROJECT. ANY DISCREPANCIES BETWEEN THE EXISTING HORIZONTAL OR VERTICAL DATA SHOWN ON THESE DRAWINGS AND THAT ENCOUNTERED IN THE FIELD MUST BE REPORTED TO THE DESIGN TEAM PRIOR TO CONSTRUCTION FOR RESOLUTION.

**GRADING AND DRAINAGE NOTES:**

- IF CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, HE SHALL HAVE MADE, AT HIS EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR AND SUBMIT IT TO THE OWNER FOR HIS REVIEW.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STORM DRAINAGE FACILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. ALL CONTRACTORS AND OTHER PERSONS UTILIZING THIS PLAN AND THE INFORMATION CONTAINED THEREIN ARE CAUTIONED THAT EACH INDIVIDUAL USING THIS PLAN MUST VERIFY THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE STARTING WORK. CONTACT THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF EXISTING STRUCTURES INCLUDING REMOVAL OF ANY EXISTING UTILITIES SERVING THE STRUCTURE. UTILITIES ARE TO BE REMOVED TO THE RIGHT-OF-WAY. ALL PROBABLE AND OTHER ORGANIC MATTER SHALL BE REMOVED FROM THE CONSTRUCTION SITE. REFER TO DRAWING CG-101, THE SITE DEMOLITION PLAN, FOR ALL EXISTING FEATURES TO BE REMOVED.
- NO TOPSOIL SHALL BE REMOVED FROM THE SITE OR USED AS SPILL TOPSOIL. MOVED DURING THE COURSE OF CONSTRUCTION SHALL BE REDISTRIBUTED SO AS TO PROVIDE AT LEAST SIX (6) INCHES OF COVER TO ALL VEGETATED AREAS OF THE SITE AND SHALL BE STABILIZED BY SEEDING OR PLANTING.
- SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED. THE EROSION AND SEDIMENTATION CONTROL PLAN IS AN INTEGRAL PART OF THE STORMWATER MANAGEMENT SYSTEM DURING CONSTRUCTION OF CERTAIN PHASES. THE EROSION AND SEDIMENTATION CONTROL PLANS SHALL BE REFERENCED AND USED IN CONJUNCTION WITH THIS DRAWING TO COMPLETE CONSTRUCTION PHASING.
- EXISTING DRAINAGE STRUCTURES ARE TO BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
- STORM DRAINAGE STRUCTURES SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THESE PLANS. ALL DRAINAGE STRUCTURES SHALL BE PRE-CAST UNLESS SHOWN OTHERWISE.
- ALL CONNECTIONS TO STORM DRAINAGE STRUCTURES SHALL BE SUPPORTED BY MEANS OF A CONCRETE GRADE TO A POINT OUTSIDE OF THE WALL WHERE THE PIPE IS FIRMLY SUPPORTED ON UNDISTURBED SOIL. ALL STORM PIPE EXTERIOR STRUCTURES SHALL BE GROUDED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT.
- STORM SEWER PIPES SHALL NOT ENTER THE CORNERS OF INLET BOXES. PIPE CONNECTIONS SHALL BE MADE AT THE SIDES OR ENDS OF BOXES.
- AT LOCATIONS WHERE PROPOSED DRAINAGE TIES INTO EXISTING DRAINAGE, INVERTS AND CONNECTIONS AT EXISTING STRUCTURES SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
- ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR INVERT FROM INVERT IN TO INVERT OUT.
- HOPE STORM PIPE SHALL BE PER ASTM F-2160, WITH JOINTS SEALED PER ASTM D-3212. BEDDING AND BACKFILL REQUIREMENTS FOR HOPE PIPE SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AS SHOWN ON DRAWING CG-501.
- TOP OF GRATE ELEVATIONS REPRESENT ELEVATIONS AT THE CURBLINE. THE SITE IS TO BE GRADED SMOOTHLY AND EVENLY IN ACCORDANCE WITH THE PROPOSED CONTOURS AND SPOT ELEVATIONS. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING A POSITIVE DRAINAGE FLOW TO ALL CATCH BASINS WITHOUT CREATING ANY FLAT SPOTS THAT WILL RESULT IN STANDING WATER (PUDDLING OR PONDING). CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
- ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING RING & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE 6" ABOVE FINISH GRADE. LIDS SHALL BE LABELED "STORM SEWER".
- CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTIGUOUS GRADE. PAVEMENT SHALL BE SAW CUT IN STRAIGHT LINES TO THE FULL DEPTH OF THE EXISTING PAVEMENT. ALL DEBRIS FROM REMOVAL OF EXISTING PAVEMENT SHALL BE REMOVED IMMEDIATELY. STOCKPILING OF DEBRIS IS NOT PERMITTED.
- IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
- THE PROPERTY OWNER, BROWBOR PROPERTY GROUP, WILL BE RESPONSIBLE FOR ANY POST CONSTRUCTION STORMWATER MAINTENANCE AFTER DEDICATION.
- ALL CUT OR FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
- ALL CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH OF 4,000 PSI.
- CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
- SEWERWORK SHALL MEET OR EXCEED TOWNSHIP AND TOWNSHIP SITE SPECIFICATIONS.
- THE SUBSURFACE DRAINAGE SYSTEM SHALL BE CONSTRUCTED WITH WATERTIGHT CONNECTIONS/GASKETS.
- ALL STORM SEWER PIPE LENGTHS ARE MEASURED FROM CENTER OF INLETS AND REPRESENT LINEAR FOOTAGE.
- ALL INLETS MUST BE EQUIPPED WITH BICYCLE SAFETY GRATES.
- REFER TO DRAWINGS CG-501 FOR STORM SEWER AND STORMWATER DETAILS.
- SPOT ELEVATIONS PROVIDED REPRESENT BOTTOM OF CURB ELEVATIONS. TOP OF CURB ELEVATIONS ARE PLUS 0.5' ABOVE BOTTOM OF CURB UNLESS OTHERWISE NOTED.
- SPOT ELEVATIONS SHOWN OFFSET FROM THE CURB AND GUTTER LINES ARE THE ELEVATIONS ALONG SAID LINES AND ARE SHOWN OFFSET FOR GRAPHICAL PURPOSES ONLY.
- ALL INLETS AND MANHOLES GREATER THAN FIVE FEET IN DEPTH WILL REQUIRE STEPS.
- SHOP DRAWINGS FOR ALL PREFABRICATED STRUCTURES SHALL BE SUBMITTED TO THE TOWNSHIP ENGINEERS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- THE LOCATIONS AND INVERTS OF ALL EXISTING UTILITY SERVICE LATERAL CONNECTIONS AND ROOF LEADERS AT THE BUILDINGS SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION, AND ANY DISCREPANCIES OR CONFLICTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF LANGAN AND THE TOWNSHIP SEWER ENGINEER FOR ADDITIONAL DESIGN CONSIDERATIONS.

(DESIGN ENGINEER), ON THIS DATE (DATE OF SIGNATURE),  
HEREBY CERTIFY THAT THE DRAINAGE PLAN MEETS ALL REQUIREMENTS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION'S (DEP'S) REGULATIONS AND THIS CHAPTER.

APPLICANT \_\_\_\_\_ DATE \_\_\_\_\_

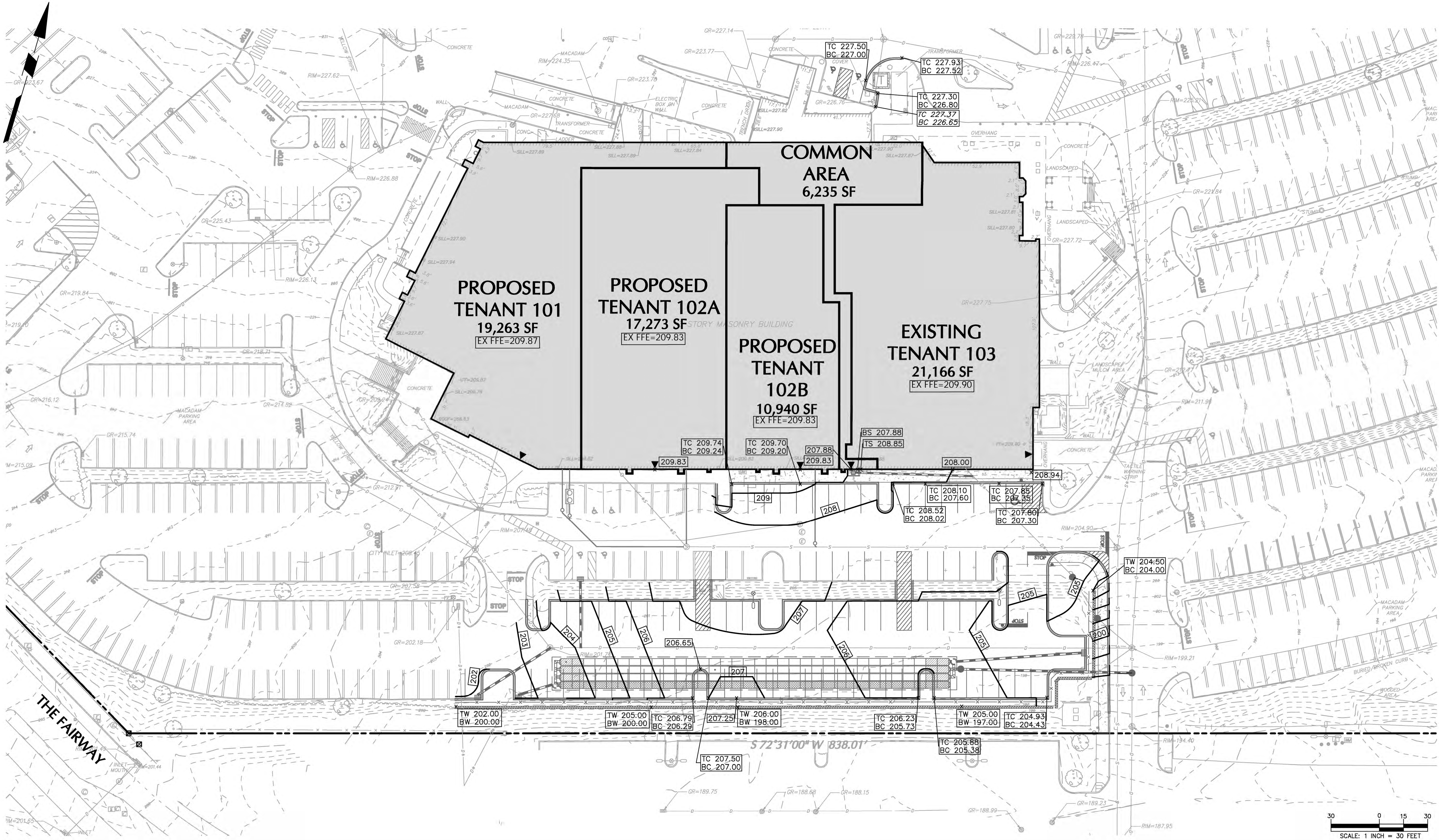
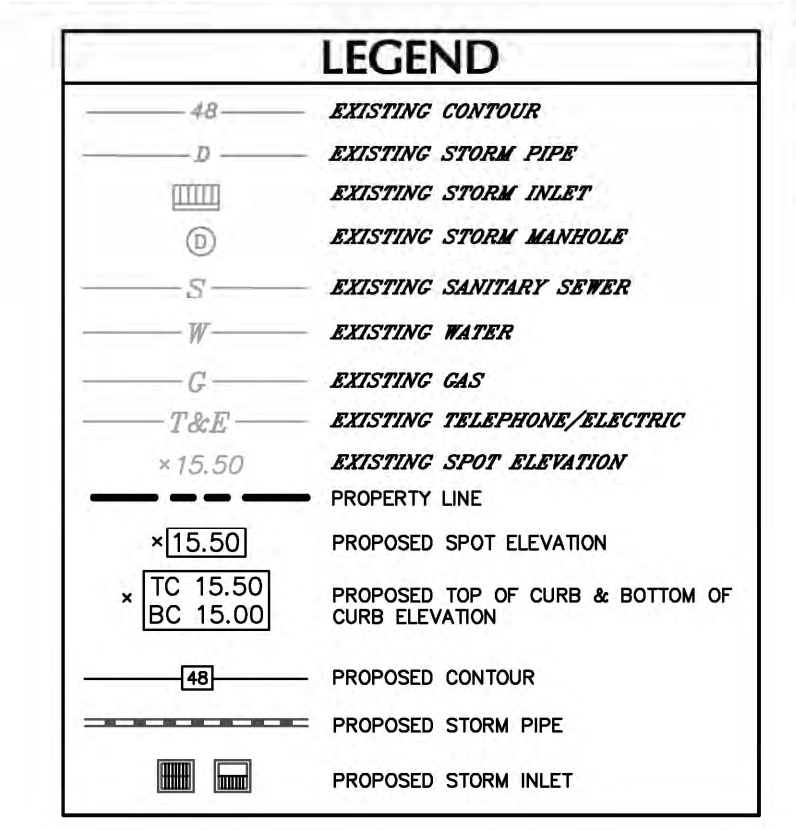
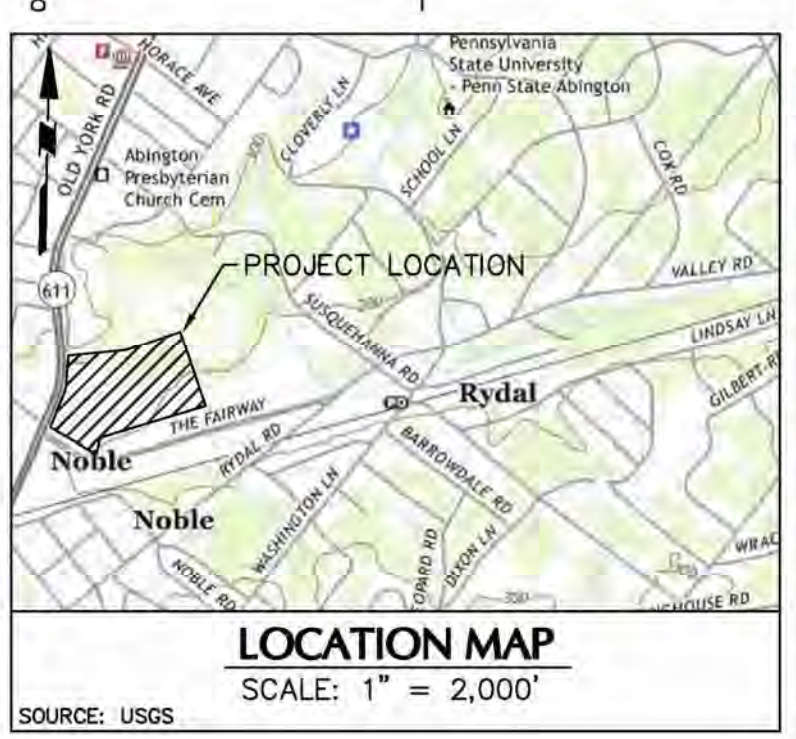
ANY REVISION TO THE APPROVED DRAINAGE PLAN MUST BE APPROVED BY THE MUNICIPALITY AND THAT A REVISED EROSION AND SEDIMENT CONTROL PLAN MUST BE SUBMITTED TO THE MUNICIPALITY OR CONSERVATION DISTRICT FOR APPROVAL.

APPLICANT \_\_\_\_\_ DATE \_\_\_\_\_

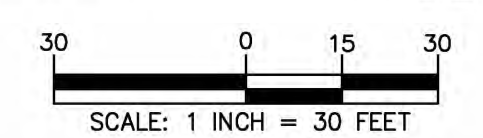
(MUNICIPAL OFFICIAL OR DESIGNEE), ON THIS DATE (DATE OF SIGNATURE), HAS REVIEWED AND HEREBY CERTIFIES THAT THE SWM SITE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE MUNICIPAL ORDINANCE NO. \_\_\_\_\_

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

**ALL CATCH BASINS SHALL BE INSTALLED WITH WATER QUALITY INLET (SNOUT OR APPROVED EQUAL) (REFER TO CONSTRUCTION DETAILS)**



Date	Description	No.
Revisions		
BRIAN M. CONLON PROFESSIONAL ENGINEER PA Lic. No. PE061782		
Langan Engineering and Environmental Services, Inc. 1818 Market Street, Suite 3300 Philadelphia, PA 19103 T: 215.845.8900 F: 215.845.8901 www.langan.com		
Project		
<b>NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS</b> ABBINGTON TOWNSHIP MONTGOMERY COUNTY PENNSYLVANIA		
Drawing Title		
<b>GRADING PLAN</b>		
Project No.		<b>CG-101</b>
Date		
Drawn By		
Checked By		
220154401 12 AUGUST 2025 TFM/AEB BMC		Sheet <b>8</b> of <b>18</b>



**GENERAL SITE NOTES:**

1. THE CONTRACTOR SHALL FURNISH, INSTALL, TEST AND COMPLETE ALL WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION. AS SUCH, THESE PLANS DO NOT COMPLETELY REPRESENT, NOR ARE THEY INTENDED TO REPRESENT, ALL SPECIFIC INSTRUCTIONS REQUIRED FOR SITEWORK CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO CONSTRUCT ALL IMPROVEMENTS DEPICTED ON THESE PLANS IN ACCORDANCE WITH ALL APPLICABLE RULES, REGULATIONS AND LAWS IN EFFECT AT THE TIME OF CONSTRUCTION.
2. THE CONTRACTOR SHALL ACCEPT THE SITE AS IS. THE CONTRACTOR SHALL ASSESS CONDITIONS, AND THE KIND, QUALITY AND QUANTITY OF WORK REQUIRED. THE OWNER AND ENGINEER MAKE NO GUARANTEE REGARDING THE ACCURACY OF ANY INFORMATION THAT WAS OBTAINED DURING INVESTIGATION. THE CONTRACTOR SHALL MAKE A THOROUGH SITE INSPECTION IN ORDER TO FIELD CHECK EXISTING SITE CONDITIONS. CORRELATE CONDITIONS WITH THE DRAWINGS, AND RESOLVE ANY POSSIBLE CONFLICTS WITH THE OWNER AND ENGINEER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL PERFORM ADDITIONAL TOPOGRAPHIC SURVEYS HE/SHE DEEMS NECESSARY, PROVIDED THEY ARE COORDINATED WITH THE OWNER. ANY CONDITIONS DETERMINED BY THE CONTRACTOR THAT DIFFER FROM THE INFORMATION SHOWN ON THE DRAWINGS THAT ARE NOT BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO THE START OF WORK SHALL NOT BE CONSIDERED GROUNDS FOR ADDITIONAL PAYMENT OR CHANGES TO THE CONTRACT DURATION, OR ANY OTHER CLAIMS AGAINST THE OWNER OR OWNER'S ENGINEER.
3. THE CONTRACTOR SHALL, WHEN HE/SHE DEEMS NECESSARY, PROVIDE A WRITTEN REQUEST FOR INFORMATION (RFI) TO THE OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE, AND ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITEWORK ITEM. THE RFI SHALL BE IN A FORM ACCEPTABLE TO OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE, AND ENGINEER AND SHALL ALLOW FOR A MINIMUM OF THREE WORK DAYS FOR A WRITTEN REPLY. RFIS SHALL BE NUMBERED CONSECUTIVELY BY DATE SUBMITTED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITEWORK ITEMS CONSTRUCTED DIFFERENTLY THAN INTENDED OR AS DEPICTED ON THE PLANS.
4. INFORMATION RELATED TO ELEVATIONS AND PROPOSED UTILITIES (SUCH AS ROADWAY GRADES, INVERT ELEVATIONS, RIM ELEVATIONS, GRATE ELEVATIONS, BUILDING FINISHED FLOOR ELEVATIONS, ETC.) MAY BE FOUND IN MORE THAN ONE LOCATION IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL SUFFICIENTLY REVIEW ALL PLANS, PROFILES AND ANY OTHER INFORMATION IN THE CONTRACT DOCUMENTS FOR CONSISTENCY PRIOR TO BID. ANY INCONSISTENCIES OR DISCREPANCIES THAT ARE FOUND BY THE CONTRACTOR OR HIS ASSIGNS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER IN WRITING, IN THE FORMAT OF AN RFI PRIOR TO BID.
5. THERE ARE ADDITIONAL NOTES, SPECIFICATIONS AND REQUIREMENTS CONTAINED THROUGHOUT THE PLAN SET AS WELL AS REFERENCES TO SPECIFICATIONS FROM APPLICABLE GOVERNING AUTHORITIES AND INDUSTRY STANDARDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN, REVIEW AND ADHERE TO ALL THESE DOCUMENTS.
6. CONTRACTOR IS SPECIFICALLY CAUTIONED THAT ALL CONSTRUCTION STAKEOUT FOR THIS PROJECT MUST BE COMPLETED FROM THE SITE SPECIFIC SURVEY CONTROL (HORIZONTAL AND VERTICAL) UPON WHICH THE DESIGN IS BASED. THE CONTRACTOR SHOULD NOT RELY ON OR RE-ESTABLISH SURVEY CONTROL BY GPS OR OTHER METHODS FOR USE IN CONSTRUCTION STAKEOUT OR ANY OTHER PURPOSE FOR THIS PROJECT. ANY DISCREPANCIES BETWEEN THE EXISTING HORIZONTAL OR VERTICAL DATA SHOWN ON THESE DRAWINGS AND THAT ENCOUNTERED IN THE FIELD MUST BE REPORTED TO THE DESIGN TEAM PRIOR TO CONSTRUCTION FOR RESOLUTION.

**GRADING AND DRAINAGE NOTES:**

1. IF CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON PLANS, WITHOUT EXCEPTION, HE SHALL MAKE, AT HIS EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR AND SUBMIT IT TO THE OWNER FOR HIS REVIEW.
2. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STORM DRAINAGE FACILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. ALL CONTRACTORS AND OTHER PERSONS UTILIZING THIS PLAN AND THE INFORMATION CONTAINED THEREON ARE CAUTIONED THAT EACH INDIVIDUAL USING THIS PLAN MUST VERIFY THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES AND FACILITIES BEFORE STARTING WORK. CONTACT THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND DEPTH OF ALL UNDERGROUND UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
3. THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF EXISTING STRUCTURES INCLUDING REMOVAL OF ANY EXISTING UTILITIES SERVING THE STRUCTURE TO BE DEMOLISHED. ALL UTILITIES TO BE REMOVED TO THE RIGHT-OF-WAY, ALL PERMISSIBLE AND OTHER ORGANIC MATTER SHALL BE REMOVED FROM THE CONSTRUCTION SITE. REFER TO DRAWING CO-10, THE SITE DEMOLITION PLAN, FOR ALL EXISTING FEATURES TO BE REMOVED.
4. NO TOPSOIL SHALL BE REMOVED FROM THE SITE OR USED AS SPILL TOPSOIL MOVED DURING THE COURSE OF CONSTRUCTION SHALL BE REDISTRIBUTED SO AS TO PROVIDE AT LEAST SIX (6) INCHES OF COVER TO ALL VEGETATED AREAS OF THE SITE AND SHALL BE STABILIZED BY SEEDING OR PLANTING.
5. SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED. THE EROSION AND SEDIMENTATION CONTROL PLAN IS AN INTEGRAL PART OF THE STORMWATER MANAGEMENT SYSTEM DURING CONSTRUCTION OF CERTAIN PHASES. THE EROSION AND SEDIMENTATION CONTROL PLANS SHALL BE REFERENCED AND USED IN CONSTRUCTION WITH THIS DRAWING TO COMPLETE CONSTRUCTION PHASING.
6. EXISTING COMPLETE STRUCTURES ARE TO BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
7. STORM DRAINAGE STRUCTURES SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THE DRAWINGS AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS AS SHOWN ON SHEET CO-501. ALL DRAINAGE STRUCTURES SHALL BE PRE-CAST UNLESS OTHERWISE NOTED.

8. ALL CONNECTIONS TO STORM DRAINAGE STRUCTURES SHALL BE SUPPORTED BY MEANS OF A CONCRETE GRABBLE TO A POINT OUTSIDE OF THE WALL WHERE THE PIPE IS FIRMLY SUPPORTED ON UNDISTURBED SOIL. STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATER-TIGHT.
9. STORM SEWER PIPES SHALL NOT ENTER THE CORNERS OF INLET BOXES. PIPE CONNECTIONS SHALL BE MADE AT THE SIDES OR ENDS OF BOXES.
10. AT LOCATIONS WHERE PROPOSED DRAINAGE TIES INTO EXISTING DRAINAGE, INVERTS AND CONNECTIONS AT EXISTING STRUCTURES SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
11. ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR INTERIOR FINISH.
12. HOPE STORM PIPE SHALL BE PER ASTM F-2180, WITH JOINTS SEALED PER ASTM D-3212. BEDDING AND BACKFILL REQUIREMENTS FOR HOPE PIPE SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AS SHOWN ON DRAWING CO-501.
13. TOP OF GRATE ELEVATIONS REPRESENT ELEVATIONS AT THE CURBLINE.
14. THE SITE IS TO BE GRADED SMOOTHLY AND EVENLY IN ACCORDANCE WITH THE PROPOSED CONTOURS AND SPOT ELEVATIONS. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING A POSITIVE DRAINAGE FLOW TO ALL CATCH BASINS WITHOUT CREATING ANY FLAT SPOTS THAT WILL RESULT IN STANDING WATER (PUDDING OR POONING). CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
15. ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING RINGS & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE 6" ABOVE FINISH GRADE. LIDS SHALL BE LABELED "STORM SEWER".
16. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE. PAVEMENT SHALL BE SAW CUT IN STRAIGHT LINES TO THE FULL DEPTH OF THE EXISTING PAVEMENT. ALL DEBRIS FROM REMOVAL AND GRADING SHALL BE REMOVED IMMEDIATELY. STOCKPILING OF DEBRIS IS NOT PERMITTED.
17. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.

18. ALL CUT OR FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
19. ALL CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSION STRENGTH OF 4,000 PSI.
20. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
21. SITEWORK SHALL MEET OR EXCEED TENANT AND TOWNSHIP SITE SPECIFICATIONS.
22. THE SUBSURFACE DRAINAGE SYSTEM SHALL BE CONSTRUCTED WITH WATER-TIGHT CONNECTIONS/GASKETS.
23. ALL STORM SEWER PIPE LENGTHS ARE MEASURED FROM CENTER OF INLETS AND REPRESENT LINEAR FOOTAGE.
24. ALL INLETS MUST BE EQUIPPED WITH BICYCLE SAFETY GRATES.
25. REFER TO DRAWINGS CO-501 FOR STORM SEWER AND STORMWATER DETAILS.
26. SPOT ELEVATIONS PROVIDED REPRESENT BOTTOM OF CURB ELEVATIONS. TOP OF CURB ELEVATIONS ARE PLUS 0.5' ABOVE BOTTOM OF CURB UNLESS OTHERWISE NOTED.
27. SPOT ELEVATIONS SHOWN OFFSET FROM THE CURB AND OUTER LINES ARE THE ELEVATIONS ALONG SAID LINES AND ARE SHOWN OFFSET FOR GRAPHICAL PURPOSES ONLY.
28. ALL INLETS AND MANHOLES GREATER THAN FIVE FEET IN DEPTH WILL REQUIRE STEPS.
29. SHOP DRAWINGS FOR ALL PREFABRICATED STRUCTURES SHALL BE SUBMITTED TO THE TOWNSHIP ENGINEERS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
30. THE LOCATIONS AND INVERTS OF ALL EXISTING UTILITY SERVICE LATERAL CONNECTIONS AND ROOF LEADERS AT THE BUILDINGS SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION, AND ANY DISCREPANCIES OR CONFLICTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF LANGAN AND THE TOWNSHIP SEWER ENGINEER FOR ADDITIONAL DESIGN CONSIDERATIONS.
31. THE PROPERTY OWNER, BRIMOR PROPERTY GROUP, WILL BE RESPONSIBLE FOR ANY POST CONSTRUCTION STORMWATER MAINTENANCE AFTER DEDICATION.

(DESIGN ENGINEER), ON THIS DATE (DATE OF SIGNATURE),  
HEREBY CERTIFY THAT THE DRAINAGE PLAN MEETS ALL REQUIREMENTS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION'S (DEP'S) REGULATIONS AND THIS CHAPTER.

APPLICANT: \_\_\_\_\_ DATE: \_\_\_\_\_

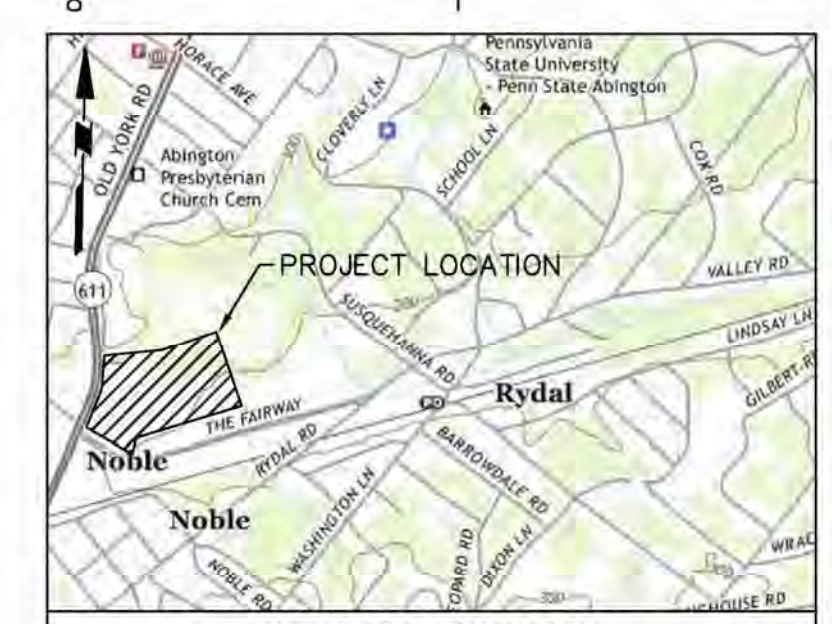
ANY REVISION TO THE APPROVED DRAINAGE PLAN MUST BE APPROVED BY THE MUNICIPALITY AND THAT A REVISED EROSION AND SEDIMENT CONTROL PLAN MUST BE SUBMITTED TO THE MUNICIPALITY OR CONSERVATION DISTRICT FOR APPROVAL.

APPLICANT: \_\_\_\_\_ DATE: \_\_\_\_\_

(MUNICIPAL OFFICIAL OR DESIGNEE), ON THIS DATE (DATE OF SIGNATURE), HAS REVIEWED AND HEREBY CERTIFIES THAT THE SWM SITE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE MUNICIPAL ORDINANCE NO. \_\_\_\_\_

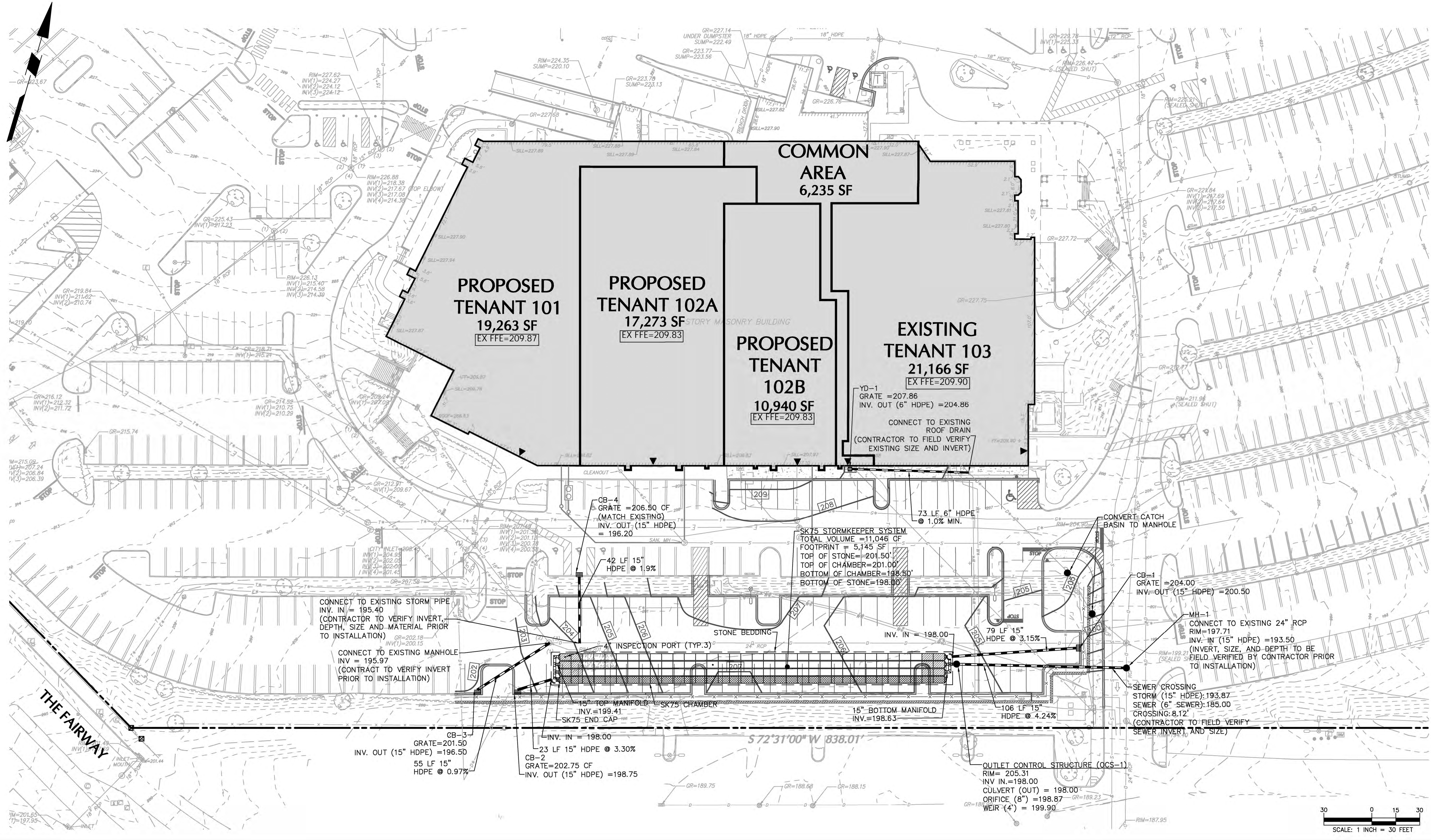
SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

**ALL PROPOSED CATCH BASINS SHALL BE INSTALLED WITH WATER QUALITY INLET (SNOUT OR APPROVED EQUAL) (REFER TO CONSTRUCTION DETAILS)**



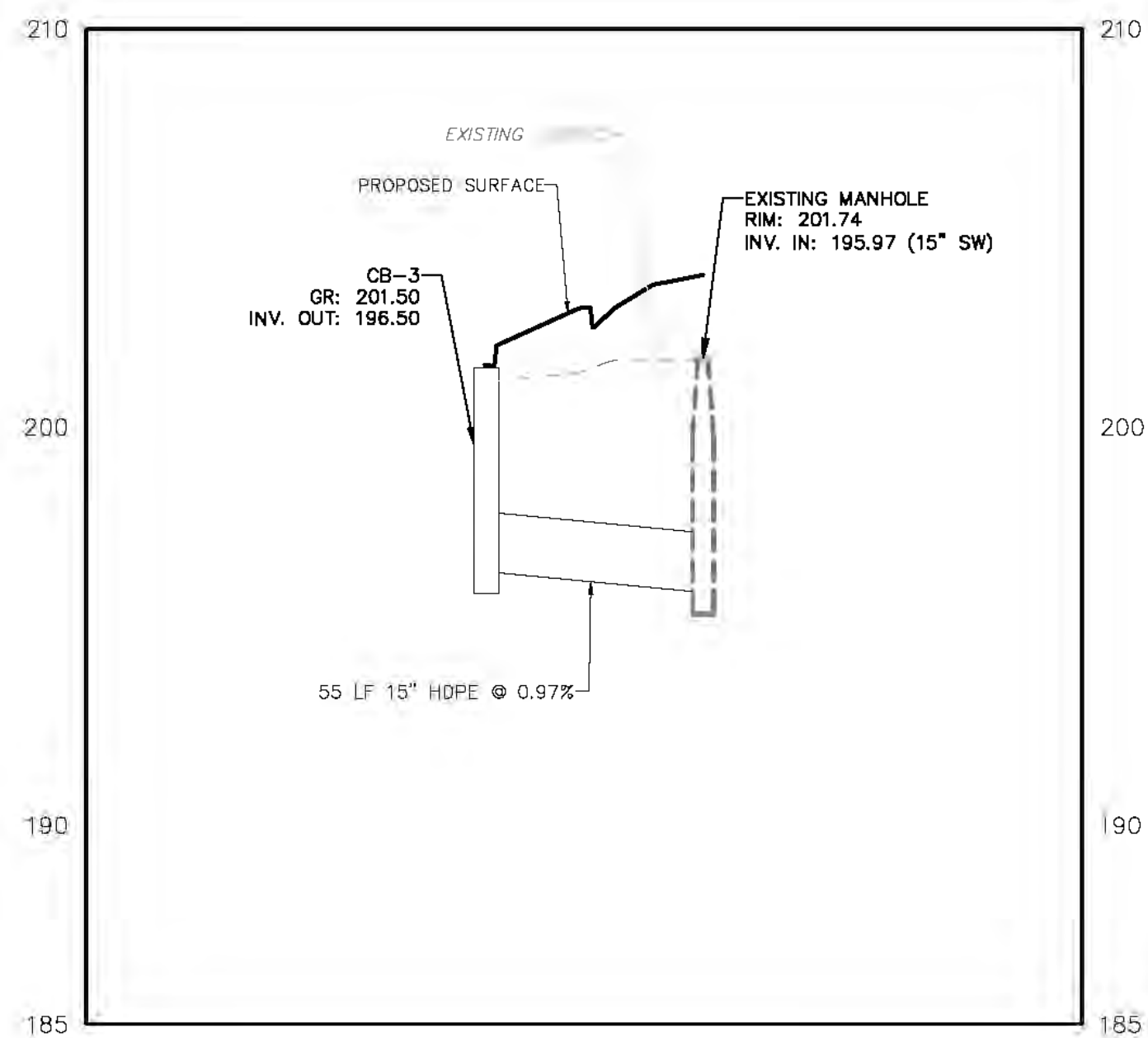
**LEGEND**

- 48 — EXISTING CONTOUR
- D — EXISTING STORM PIPE
- I — EXISTING STORM INLET
- S — EXISTING STORM MANHOLE
- S — EXISTING SANITARY SEWER
- W — EXISTING WATER
- G — EXISTING GAS
- T & E — EXISTING TELEPHONE/ELECTRIC
- — — — — PROPERTY LINE
- — — — — PROPOSED CONTOUR
- — — — — PROPOSED STORM PIPE
- — — — — PROPOSED STORM INLET

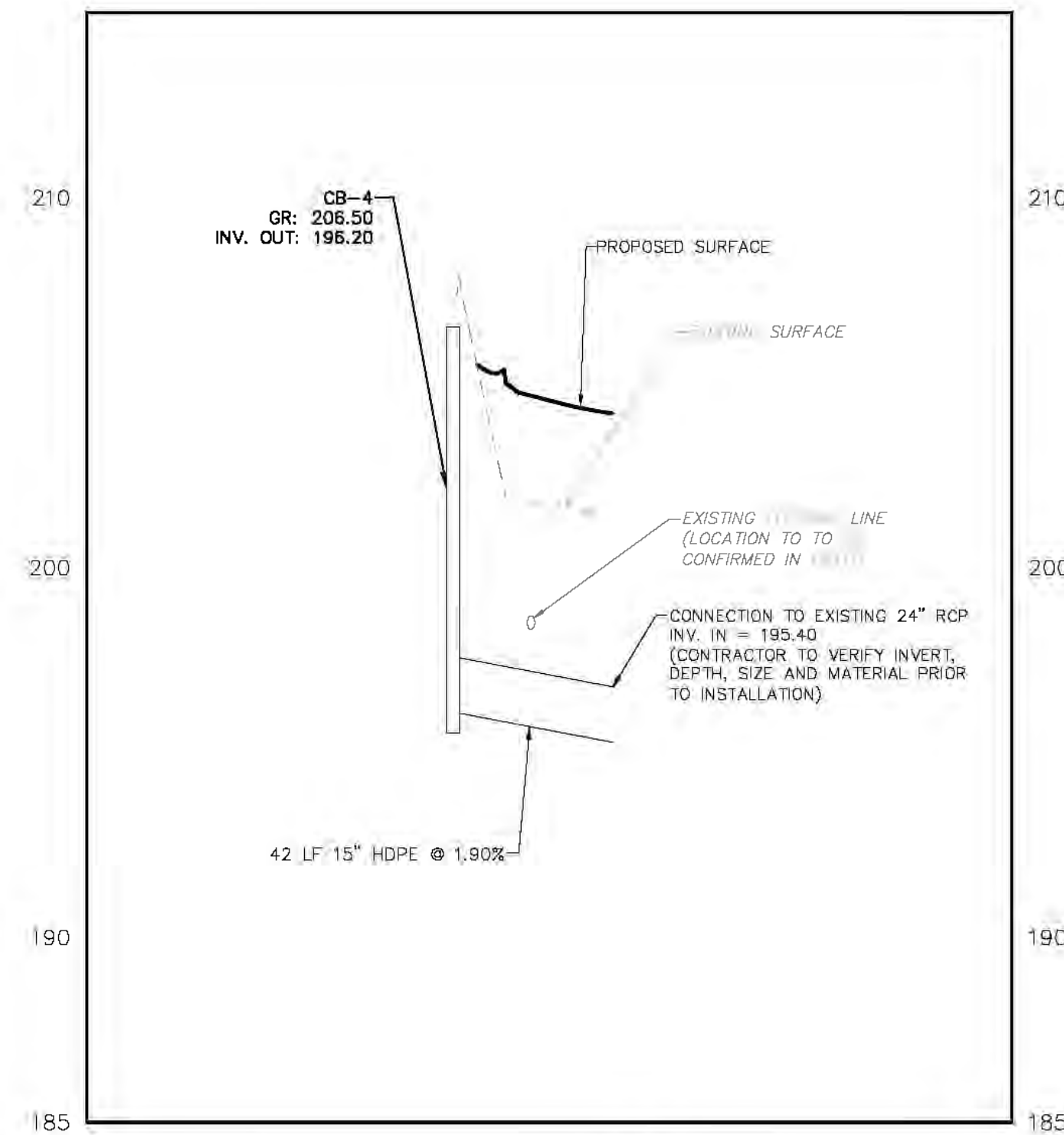


Date	Description	No.
Revisions		
BRIAN M. CONLON PROFESSIONAL ENGINEER PA Lic. No. PE061782		
Langan Engineering and Environmental Services, Inc. 1818 Market Street, Suite 3300 Philadelphia, PA 19103 T: 215.845.8900 F: 215.845.8901 www.langan.com		
Project		
<b>NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS</b> ABINGTON TOWNSHIP MONTGOMERY COUNTY PENNSYLVANIA		
Drawing Title		
<b>DRAINAGE PLAN</b>		
Project No.	220154401	
Date	12 AUGUST 2025	
Drawn By	TFH/AEB	
Checked By	BMC	
Sheet	9 of 18	

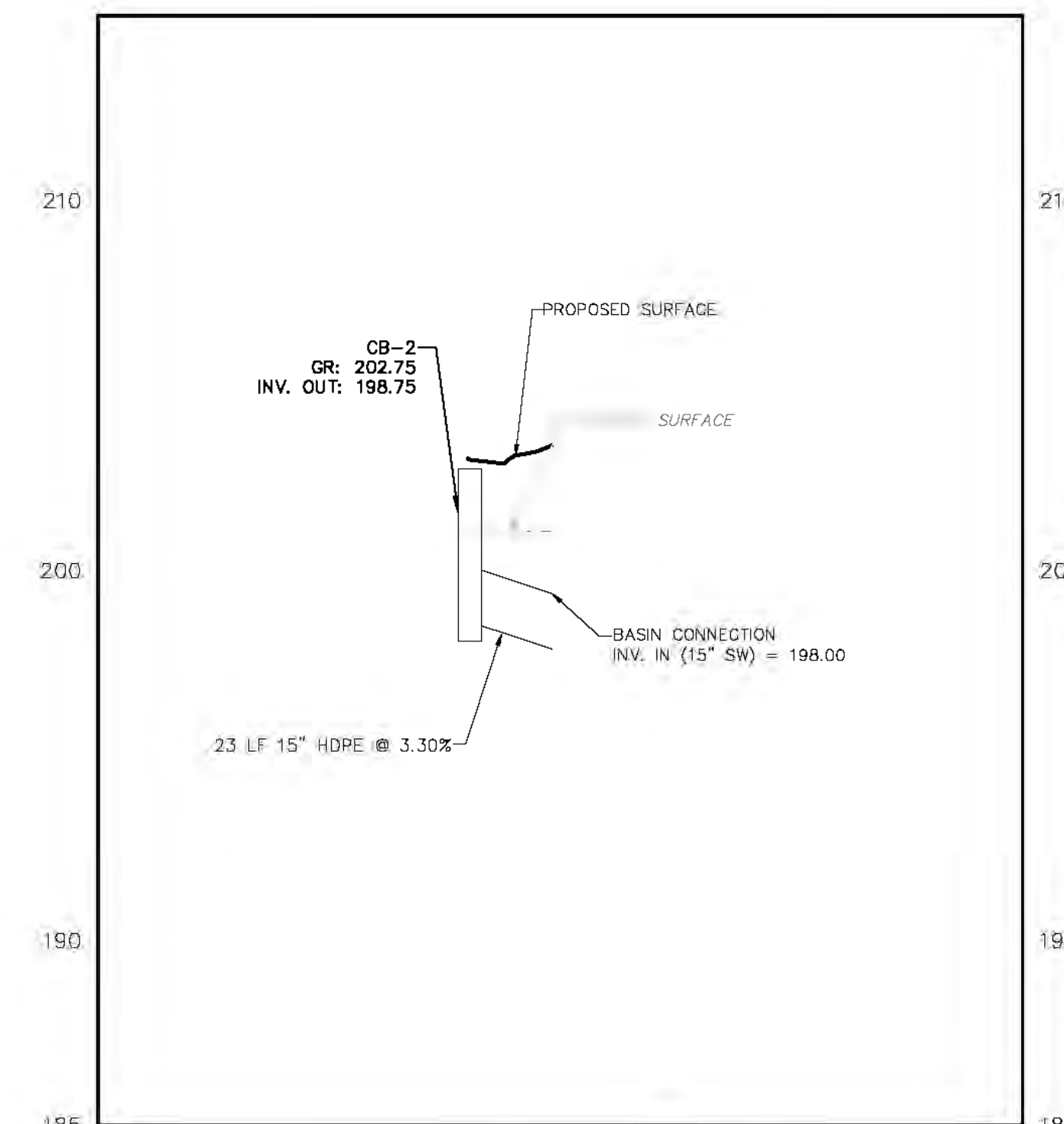
Project No. 220154401



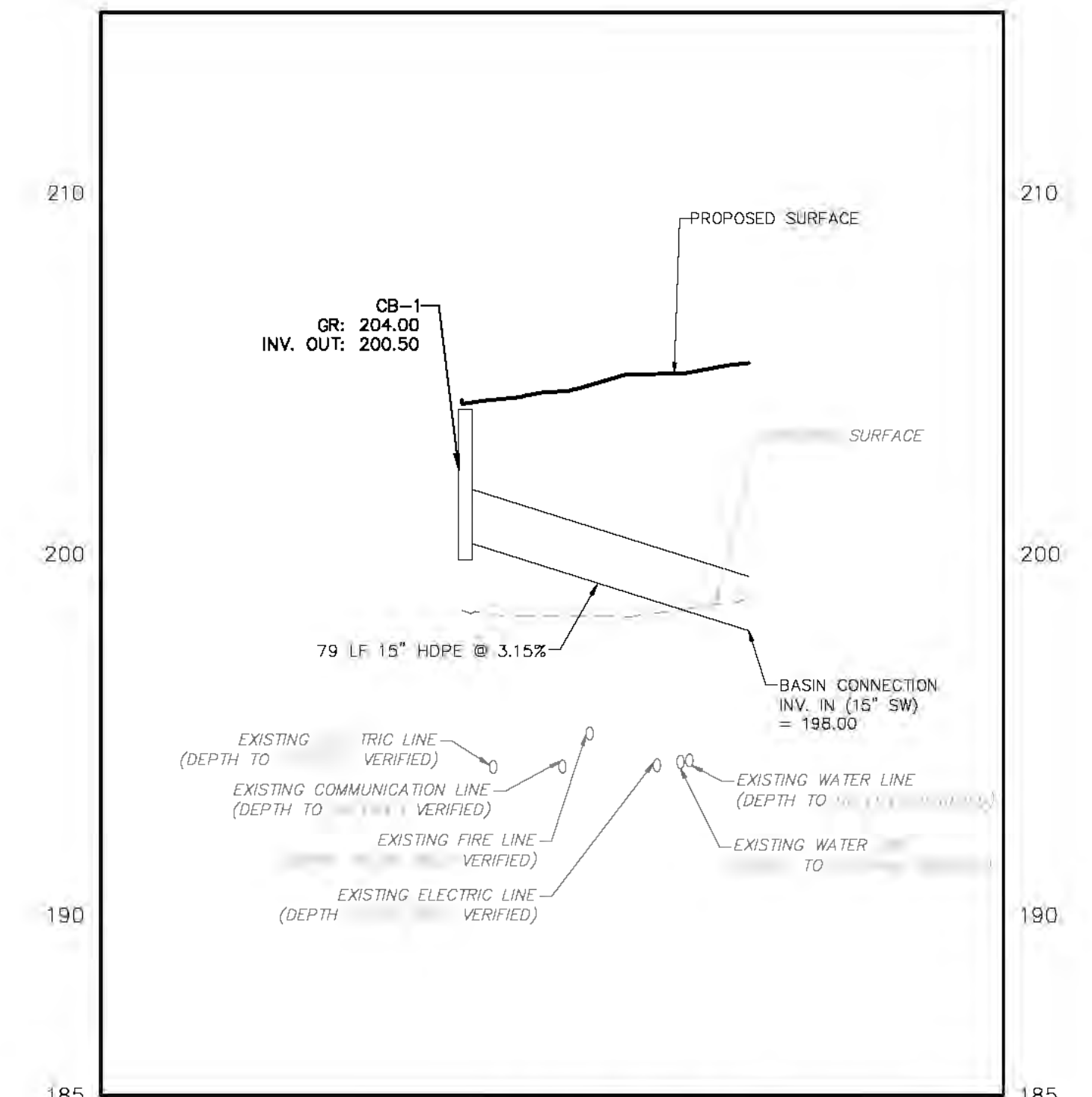
CB-3 TO EXISTING MANHOLE PROFILE



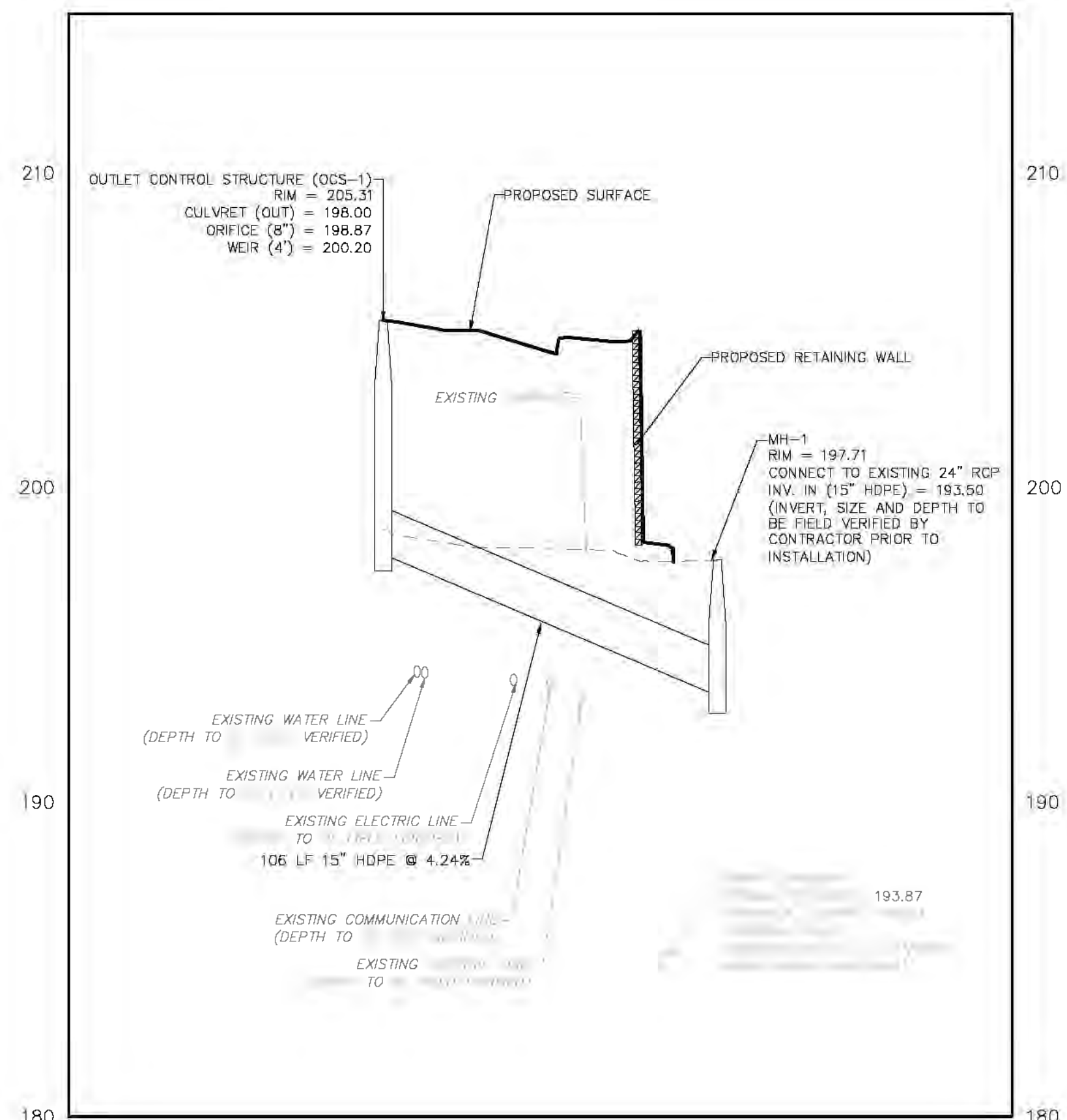
CB-4 TO EXISTING PIPE PROFILE



CB-2 TO BASIN PROFILE



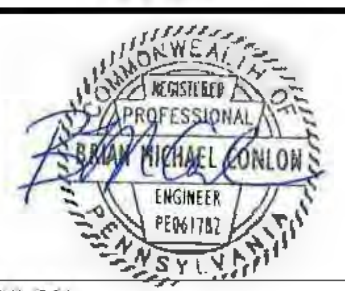
CB-1 TO BASIN PROFILE



OCS-1 TO MH-1 PROFILE

Date	Description	No.
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Revisions



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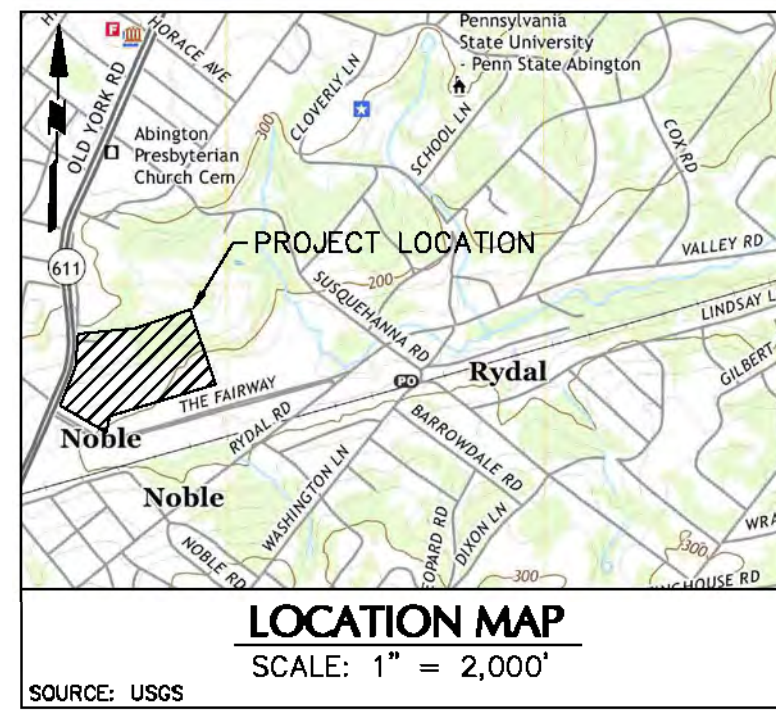
**LANGAN**

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Project  
**NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS**  
ABINGTON TOWNSHIP  
MONTGOMERY COUNTY PENNSYLVANIA

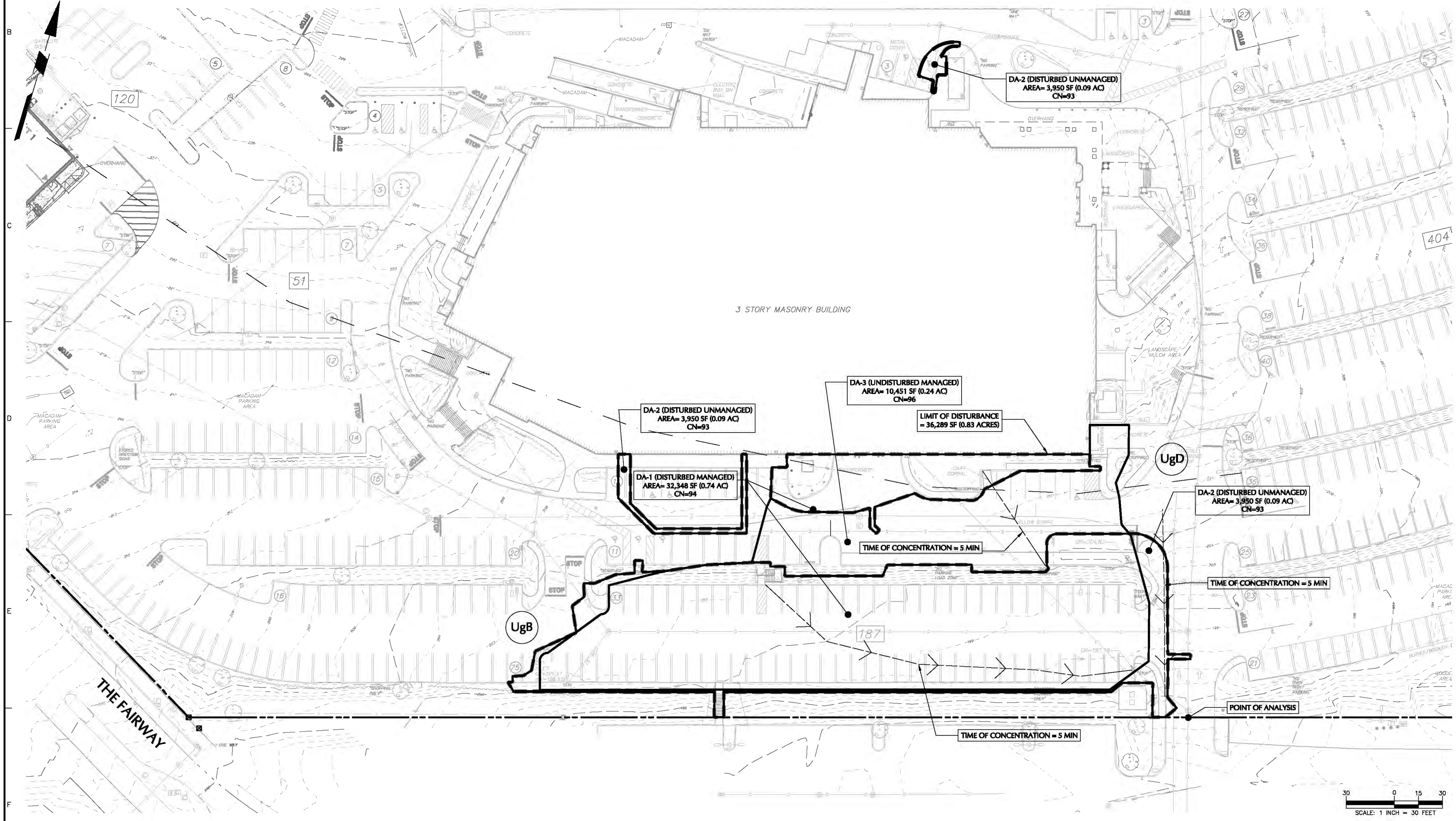
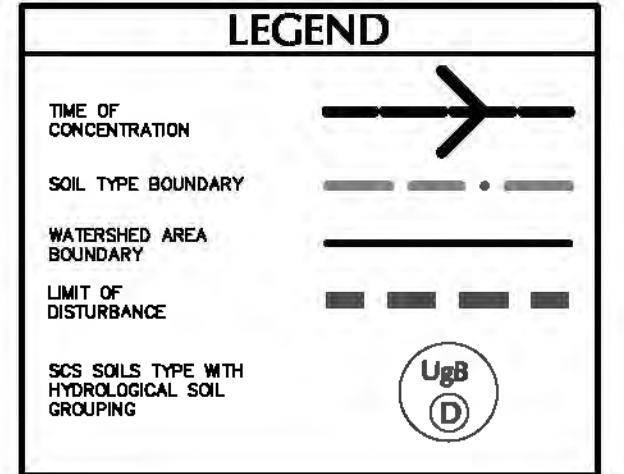
Drawing Title  
**STORM SEWER PROFILES**

Project No. <b>220154401</b>	<b>CG-201</b>
Date <b>12 AUGUST 2025</b>	
Drawn By <b>TFH/AEB</b>	
Checked By <b>BMC</b>	

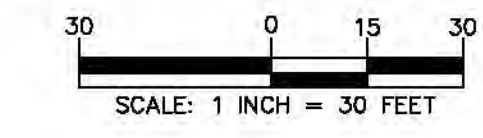


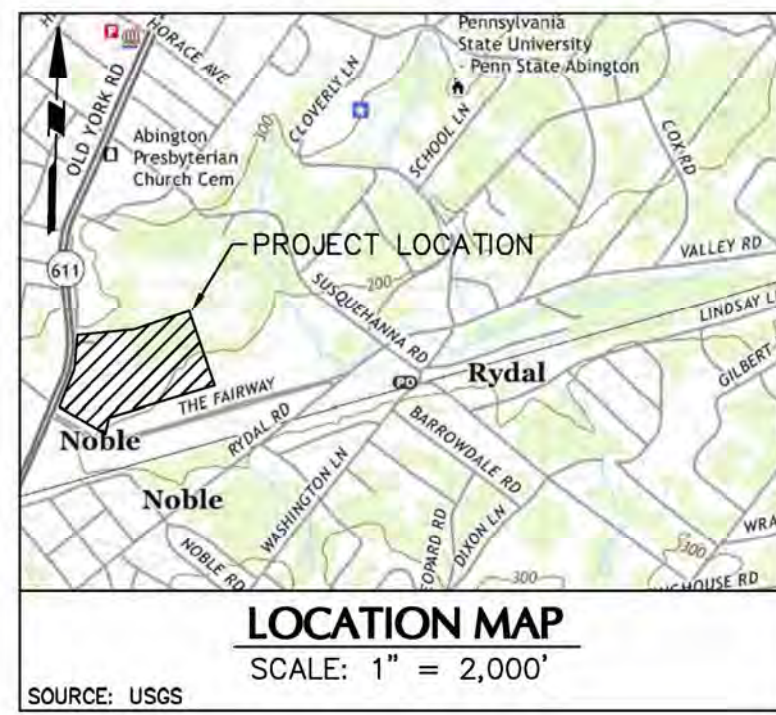
MAP SYMBOL	DESCRIPTION	LIMITATIONS			SUITABILITY AS SOURCE OF		ENGINEERING CHARACTERISTICS		CONSTRUCTION TECHNIQUES / SPECIAL CONSIDERATIONS	
		SEASONAL STREETS & PARKING	BUILDINGS WITH BASEMENTS	LANES & LANDSCAPING	TOPSOIL	ROAD FILL	FORMER SOIL DEPTH	DEPTH TO BEDROCK		
UgB	URBAN LANE, 0 TO 5 PERCENT SLOPE	N/A	N/A	N/A	N/A	N/A	N/A	>200 CM	>300 CM	Contractor shall determine appropriate means and methods of construction based on field verified conditions in order to achieve design intent as presented by the contract drawings and specifications. Contractor shall determine appropriate means and methods of construction based on field verified conditions in order to achieve design intent as presented by the contract drawings and specifications.
UgD	URBAN LANE, 5 PERCENT TO 15 PERCENT SLOPE	N/A	N/A	N/A	N/A	N/A	N/A	>200 CM	200 CM	

\* DWT = DEPTH TO WATER TABLE  
INFORMATION IS BASED ON WEB SOIL SURVEY OF MONTGOMERY COUNTY, PENNSYLVANIA ADMINISTERED BY THE NATURAL RESOURCES CONSERVATION SERVICE.



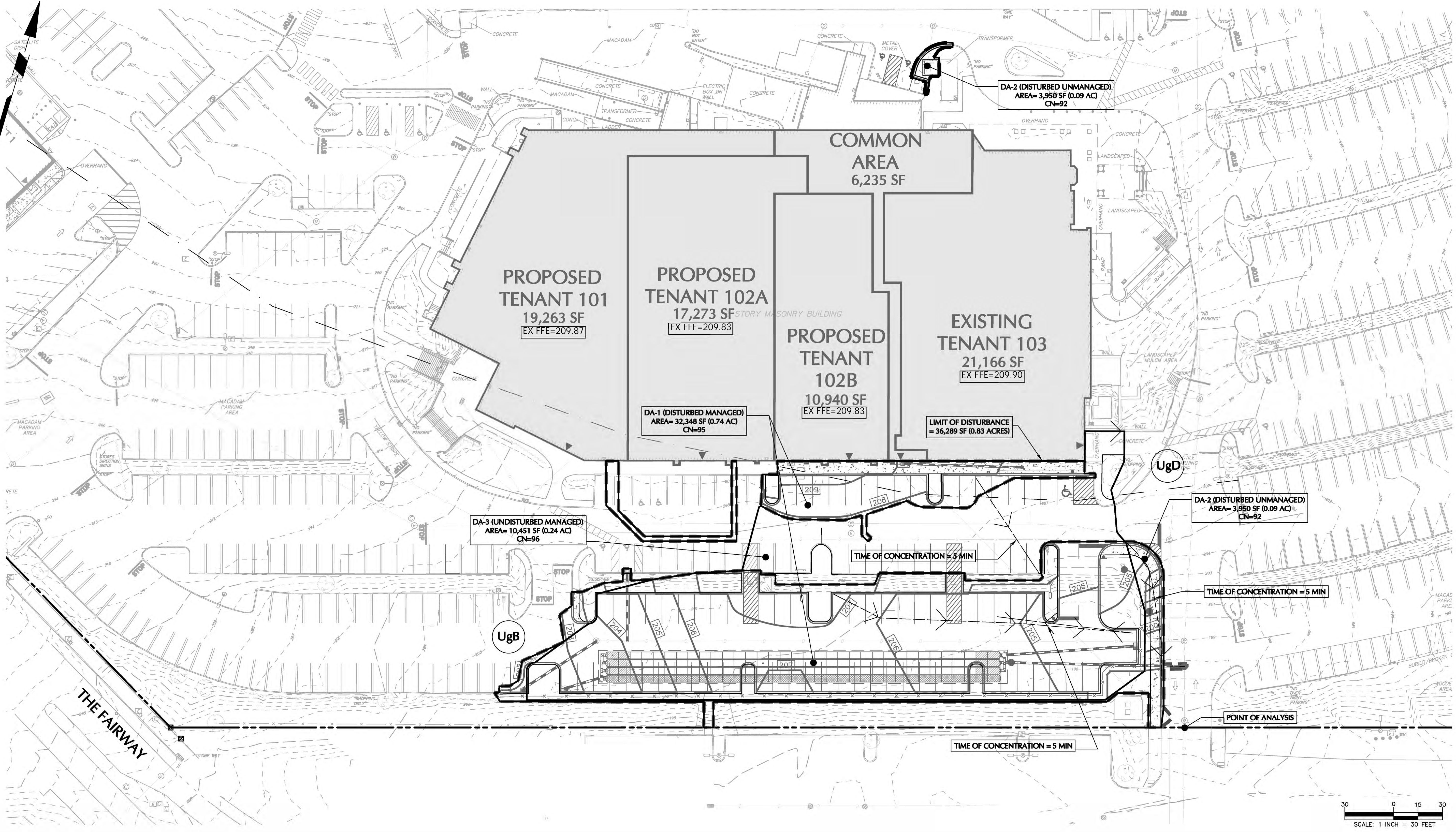
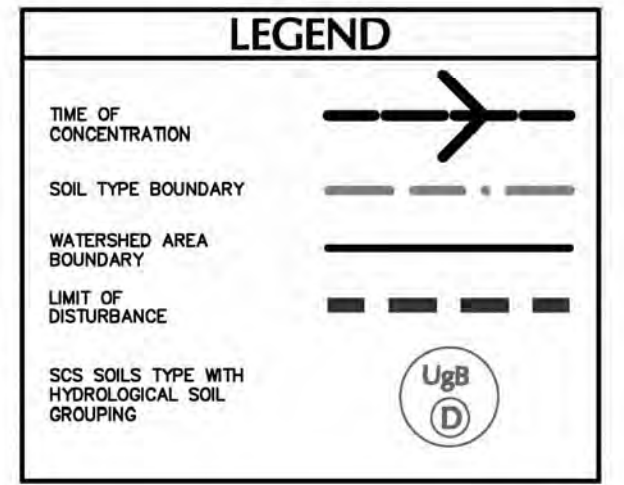
Date	Description	No.
Revisions		
BRIAN M. CONLON PROFESSIONAL ENGINEER PA Lic. No. PE061782		
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Project <b>NOBLE TOWN CENTER REDEVELOPMENT - SOUTH PARKING</b> ABINGTON TOWNSHIP MONTGOMERY COUNTY PENNSYLVANIA Drawing Title <b>PRE-CONSTRUCTION DRAINAGE AREA PLAN</b>		
Project No.	220154401	<b>CG-301</b>
Date	12 AUGUST 2025	
Drawn By	TFH/AEB	
Checked By	BMC	
Sheet 1 of 1		



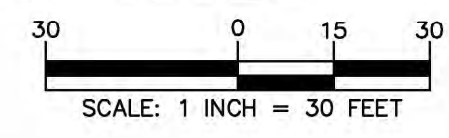


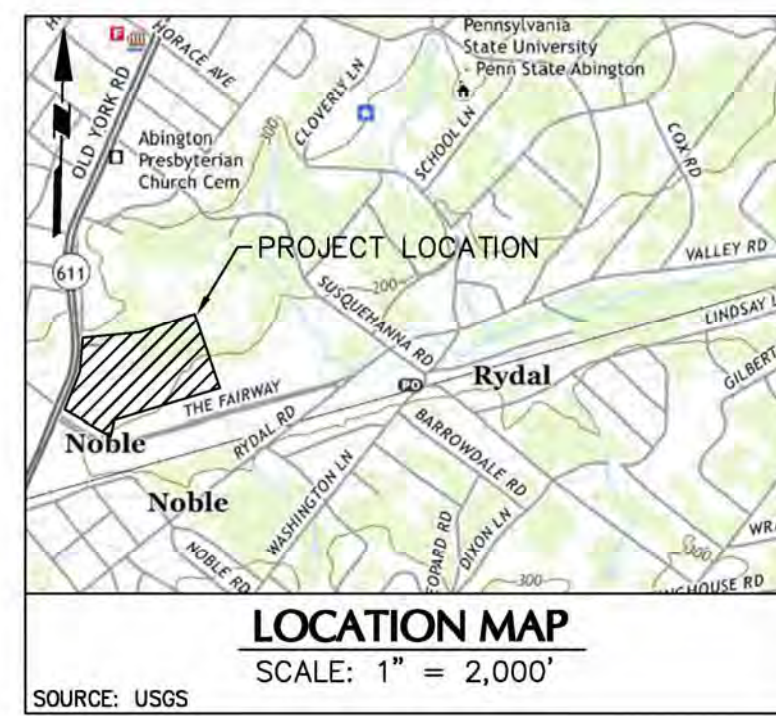
MAP SYMBOL	DESCRIPTION	LIMITATIONS			SUITABILITY AS SOURCE OF		ENGINEERING CHARACTERISTICS		CONSTRUCTION TECHNIQUES / SPECIAL CONSIDERATIONS
		SUBDIVISION	BUILDINGS WITH	LANES & LANDSCAPING	TOPSOIL	ROAD FILL	HYDRO. SOIL	DEPTH TO BEDROCK	
UgB	URBAN LAWN & TREE PERENNIAL SURFS	N/A	N/A	N/A	N/A	N/A	>200 CM	>200 CM	Contractor shall determine appropriate means and methods of construction based on field verified conditions in order to achieve design intent as presented by the contract drawings and specifications.
UgD	URBAN LAWNS, CONCRETE, ASPHALT TO PERENNIAL SURFS	N/A	N/A	N/A	N/A	N/A	>200 CM	200 CM	Contractor shall determine appropriate means and methods of construction based on field verified conditions in order to achieve design intent as presented by the contract drawings and specifications.

\* DWT = DEPTH TO WATER TABLE  
INFORMATION IS BASED ON WEB SOIL SURVEY OF MONTGOMERY COUNTY, PENNSYLVANIA ADMINISTERED BY THE NATURAL RESOURCES CONSERVATION SERVICE.



Date	Description	No.
Revisions		
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Project <b>NOBLE TOWN CENTER REDEVELOPMENT - SOUTH PARKING</b> ABINGTON TOWNSHIP MONTGOMERY COUNTY PENNSYLVANIA		
Drawing Title <b>POST-CONSTRUCTION DRAINAGE AREA PLAN</b>		
Project No.	220154401	<b>CG-302</b>
Date	12 AUGUST 2025	
Drawn By	TFH/AEB	
Checked By	BMC	
Sheet 1 of 1		

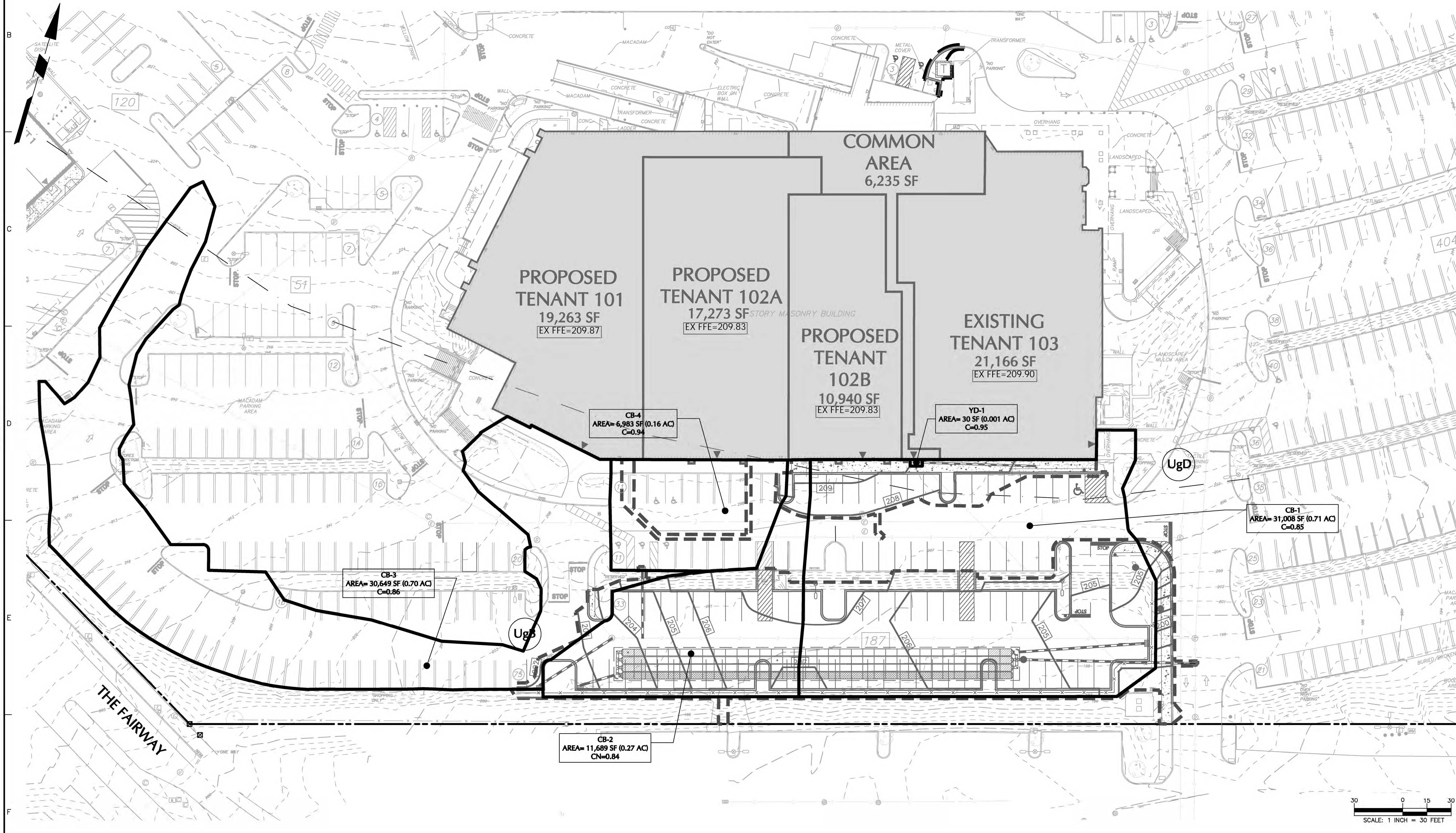




MAP SYMBOL	DESCRIPTION	LIMITATIONS			SUITABILITY AS SOURCE OF		ENGINEERING CHARACTERISTICS		CONSTRUCTION TECHNIQUES / SPECIAL CONSIDERATIONS	
		RESURFACING	BUILDINGS WITH STREETS & PARKING	LANDSCAPING	TOPSOIL	ROAD FILL	HYDRO. SOIL GROUP	DWT*		DEPTH TO BEDROCK
UgB	URBAN LAND, 0 TO 8 PERCENT SLOPE	N/A	N/A	N/A	N/A	N/A	N/A	>200 CM	>200 CM	Contractor shall determine appropriate means and methods of construction based on field verified conditions in order to achieve design intent as presented by the contract drawings and specifications.
UgD	URBAN LANDSCAPE COMPLEX, 8 TO 15 PERCENT SLOPE	N/A	N/A	N/A	N/A	N/A	N/A	>200 CM	200 CM	Contractor shall determine appropriate means and methods of construction based on field verified conditions in order to achieve design intent as presented by the contract drawings and specifications.

\* DWT - DEPTH TO WATER TABLE INFORMATION IS BASED ON WEB SOIL SURVEY OF MONTGOMERY COUNTY, PENNSYLVANIA ADMINISTERED BY THE NATURAL RESOURCES CONSERVATION SERVICE.

LEGEND	
CATCH BASIN DRAINAGE AREA	
LIMIT OF DISTURBANCE	
SOIL TYPE BOUNDARY	
SCS SOILS TYPE WITH HYDROLOGICAL SOIL GROUPING	



Date	Description	No.
Revisions		



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Project  
**NOBLE TOWN CENTER REDEVELOPMENT - SOUTH PARKING**  
ABINGTON TOWNSHIP  
MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title  
**INLET DRAINAGE AREA PLAN**

Project No. 220154401	<b>CG-303</b>
Date 12 AUGUST 2025	
Drawn By TFH/AEB	
Checked By BMC	



**GENERAL NOTES:**  
 1. MATERIALS: UNLESS OTHERWISE SPECIFIED ON THE PLANS OR HEREIN, CORRUGATED POLYETHYLENE PIPE SHALL CONFORM TO ASTM M-294, LATEST EDITION, STANDARD SPECIFICATION FOR CORRUGATED POLYETHYLENE PIPE.  
 2. RESINS: CORRUGATED POLYETHYLENE PIPE SHALL BE MANUFACTURED FROM HIGH DENSITY POLYETHYLENE VIRIDON COMPOUNDS, AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3350 FOR THE CELL CLASSIFICATION 335400C.  
 3. COUPLING BANDS: EXCEPT AS OTHERWISE REQUIRED HEREIN, COUPLING BANDS AND OTHER HARDWARE FOR CORRUGATED POLYETHYLENE PIPE SHALL DEMONSTRATE THAT THEY MEET THE SOIL TIGHTNESS REQUIREMENTS OF ASHTO SECTION 26 "STANDARD" SPECIFICATIONS FOR HIGHWAY BRIDGES.  
 COUPLING BANDS SHALL LAP EQUALLY ON EACH OF THE PIPES BEING CONNECTED TO FORM A TIGHTLY CLOSED JOINT AFTER INSTALLATION.  
 THE CORRUGATIONS IN THE BAND SHALL INDEX THE CORRUGATIONS IN THE PIPE ENDS TO ENGAGE AT LEAST TWO FULL CORRUGATIONS FROM THE END OF EACH PIPE.  
 WHEN INFILTRATION OR EXFILTRATION IS A CONCERN, THE COUPLING BANDS MAY BE REQUIRED TO HAVE GASKETS. THE GASKET MATERIAL SHALL BE CLOSED-CELL EXPANDED RUBBER OR NEOPRENE.  
 OTHER COUPLINGS MAY BE BELL & SPIGOT AND CONFORM TO THE REQUIREMENTS OF ASHTO M294.  
 4. DESIGNATION OF TYPE: THE PIPE MAY BE ONE OR BOTH OF THE FOLLOWING TYPE:  
 TYPE S: THIS PIPE WILL HAVE A FULL CIRCULAR CROSS-SECTION, WITH AN OUTER CORRUGATED PIPE WALL AND A SMOOTH INNER LINER.  
 TYPE D: THIS PIPE SHALL CONSIST OF AN ESSENTIALLY SMOOTH WATERWAY BRACED CIRCUMFERENTIALLY WITH CIRCULAR RIBS WHICH ARE FORMED SIMULTANEOUSLY WITH A SMOOTH OUTER WALL.  
 5. INSTALLATION: CORRUGATED POLYETHYLENE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH TABLE AND ASTM D-2321, LATEST EDITION, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS."

**CLASSES OF EMBEDMENT AND BACKFILL MATERIALS**

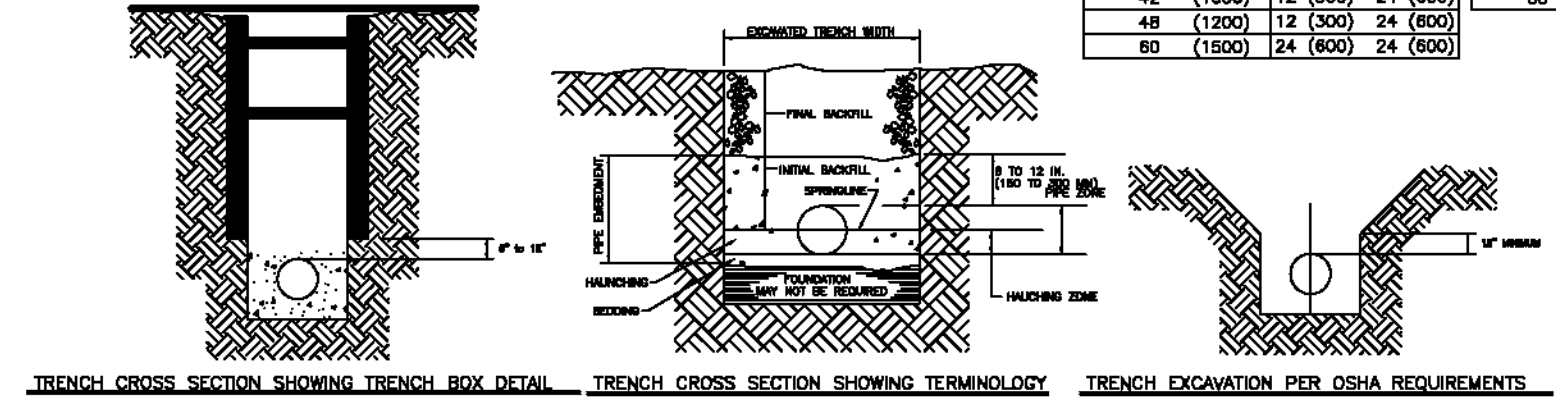
CLASS	TYPE	SOIL GROUP SYMBOL, D 2487	DESCRIPTION	PERCENTAGE PASSING SIEVE SIZES	NO. 4 (4.75 MM)	NO. 10 (2.00 MM)
IA	MANUFACTURED AGGREGATES OPEN-GRADED, CLEAN	NONE	ANGULAR, CRUSHED STONE OR ROCK, CRUSHED GRAVEL, BROKEN COAL, CRUSHED SLAG, CONCRETE OR SHELLS, LARGE VOID CONTENT, CONTAIN LITTLE OR NO FINES.	100 %	≤ 10 %	≤ 5 %
IB	MANUFACTURED, PROCESSED AGGREGATES, DENSE-GRADED, CLEAN	NONE	ANGULAR, CRUSHED STONE (OR OTHER CLASS A MATERIALS) AND STONE/SAND MIXTURES WITH GRANULATIONS SELECTED TO MINIMIZE MIGRATION OF ADJACENT SOILS; CONTAIN LITTLE OR NO FINES (SEE X1.3).	100 %	≤ 50 %	≤ 5 %
II	COARSE-GRAINED SOILS, CLEAN	GW	WELL-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES.	100 %	≤ 50 %	≤ 5 %
		GP	POORLY-GRADED GRAVELS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES.			
		SW	WELL-GRADED SANDS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES.		> 50 % OF "COARSE FRACTION"	
		SP	POORLY-GRADED SANDS AND GRAVEL-SAND MIXTURES; LITTLE OR NO FINES.			
	COARSE-GRAINED SOILS, BORDERLINE CLEAN TO W/FINES	E.G. GW-GC, GP-GM	SANDS AND GRAVELS WHICH ARE BORDERLINE BETWEEN CLEAN AND WITH FINES.	100 %	VARIES	5 % TO 12 %
III	COARSE-GRAINED SOILS WITH FINES	GC	CLAYEY GRAVELS, GRAVEL-SAND MIXTURES.	100 %	≤ 50 % OF "COARSE FRACTION"	12 % TO 30 %
		SC	SILTY SANDS, SAND-SILT MIXTURES.			
		SM	CLAYEY SANDS, SAND-CLAY MIXTURES.			

**RECOMMENDATIONS FOR INSTALLATION AND USE OF SOILS AND AGGREGATES FOR FOUNDATION, EMBEDMENT AND BACKFILL**

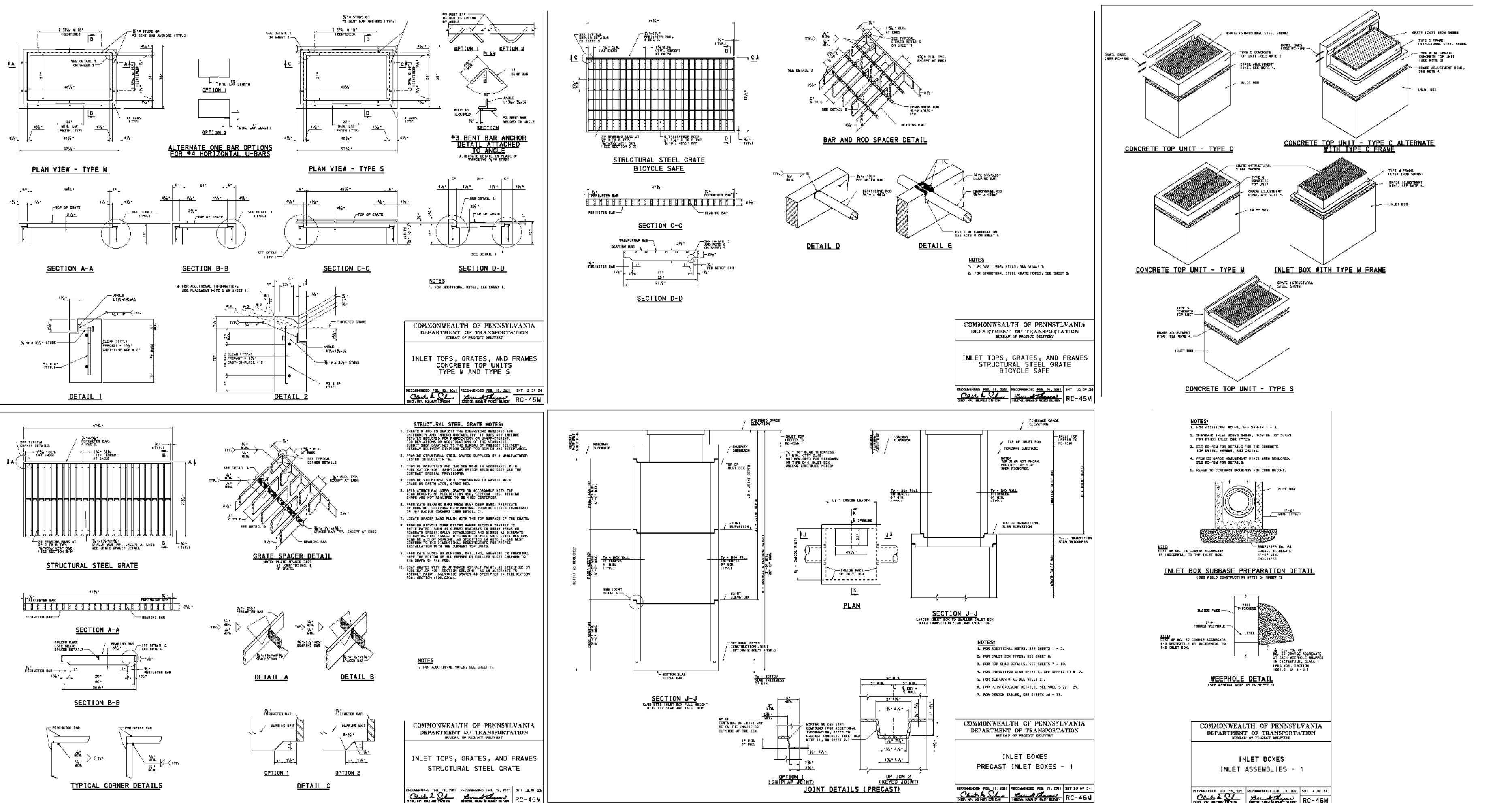
SOIL CLASS	CLASS I	CLASS II	CLASS III	CLASS IV	
FOUNDATION	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED AND UNDESIRABLE TRENCH BOTTOM AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS.	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED AND UNDESIRABLE TRENCH BOTTOM AS RESTRICTED ABOVE. DO NOT USE IN THICKNESS GREATER THAN 12 IN. TOTAL. SHALL AND COMPACT IN 6-IN. MAXIMUM LAYERS.	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED AND UNDESIRABLE TRENCH BOTTOM AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS. LEVEL FINAL GRADE BY HAND. MINIMUM DEPTH 4 IN. (6 IN. IN ROCK CUTS).	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED AND UNDESIRABLE TRENCH BOTTOM AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS. LEVEL FINAL GRADE BY HAND. MINIMUM DEPTH 4 IN. (6 IN. IN ROCK CUTS).	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED AND UNDESIRABLE TRENCH BOTTOM AS RESTRICTED ABOVE. INSTALL AND COMPACT TO A MINIMUM OF 6 IN. ABOVE PIPE CROWN.
EMBEDMENT	FACE AND WORK BY HAND TO INSURE ALL EXCAVATED VOIDS AND HUNCH ARE FILLED FOR HIGH DENSITIES USE VIBRATORY COMPACTORS.	MINIMUM DENSITY 95 % STD. PROCTOR USE HAND TAMPERS OR VIBRATORY COMPACTORS.	MINIMUM DENSITY 95 % STD. PROCTOR USE HAND TAMPERS OR VIBRATORY COMPACTORS.	MINIMUM DENSITY 95 % STD. PROCTOR USE HAND TAMPERS OR VIBRATORY COMPACTORS.	MINIMUM DENSITY 95 % STD. PROCTOR USE HAND TAMPERS OR VIBRATORY COMPACTORS.
FINAL BACKFILL	COMPACT AS REQUIRED BY THE ENGINEER.	COMPACT AS REQUIRED BY THE ENGINEER.	COMPACT AS REQUIRED BY THE ENGINEER.	COMPACT AS REQUIRED BY THE ENGINEER.	

**HIGH DENSITY CORRUGATED POLYETHYLENE PIPE**  
 H-20 AND E-80 LIVE LOADS

NOMINAL DIAMETER	MINIMUM COVER IN. & (MM)	DIAMETER OF PIPE BETWEEN PIPES IN. (MM)	DIAMETER O.D.	TRENCH WIDTH
12 (300)	12 (300)	12 (300)	12.45"	31"
15 (375)	12 (300)	24 (600)	15.17"	34"
18 (450)	12 (300)	24 (600)	18.21"	36"
24 (600)	12 (300)	24 (600)	24.36"	48"
30 (750)	12 (300)	24 (600)	30.36"	60"
36 (900)	12 (300)	24 (600)	36.42"	78"
42 (1050)	12 (300)	24 (600)	42.48"	96"
48 (1200)	12 (300)	24 (600)	48.54"	102"
60 (1500)	24 (600)	24 (600)	60.66"	102"

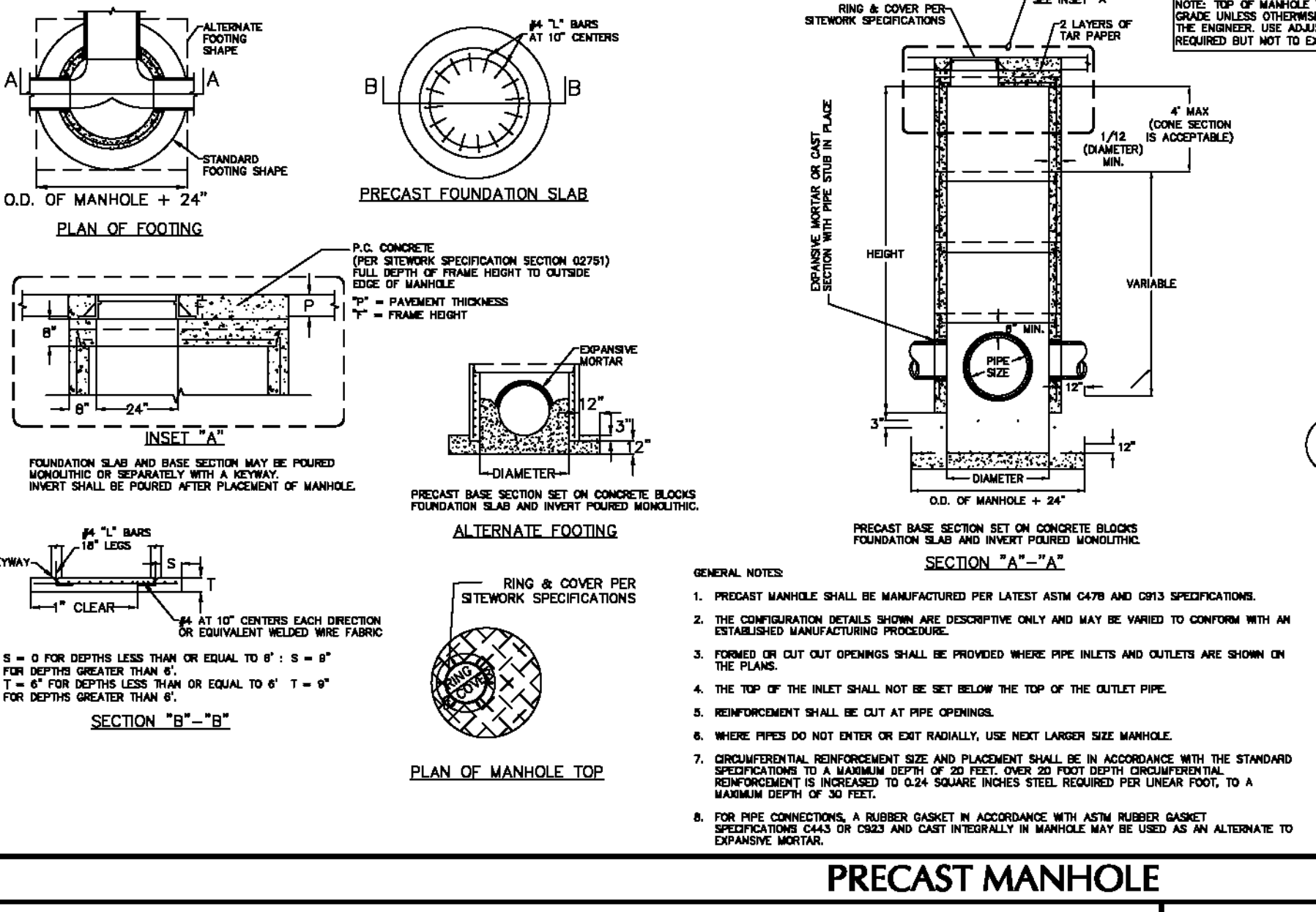


**HDPE PIPE**

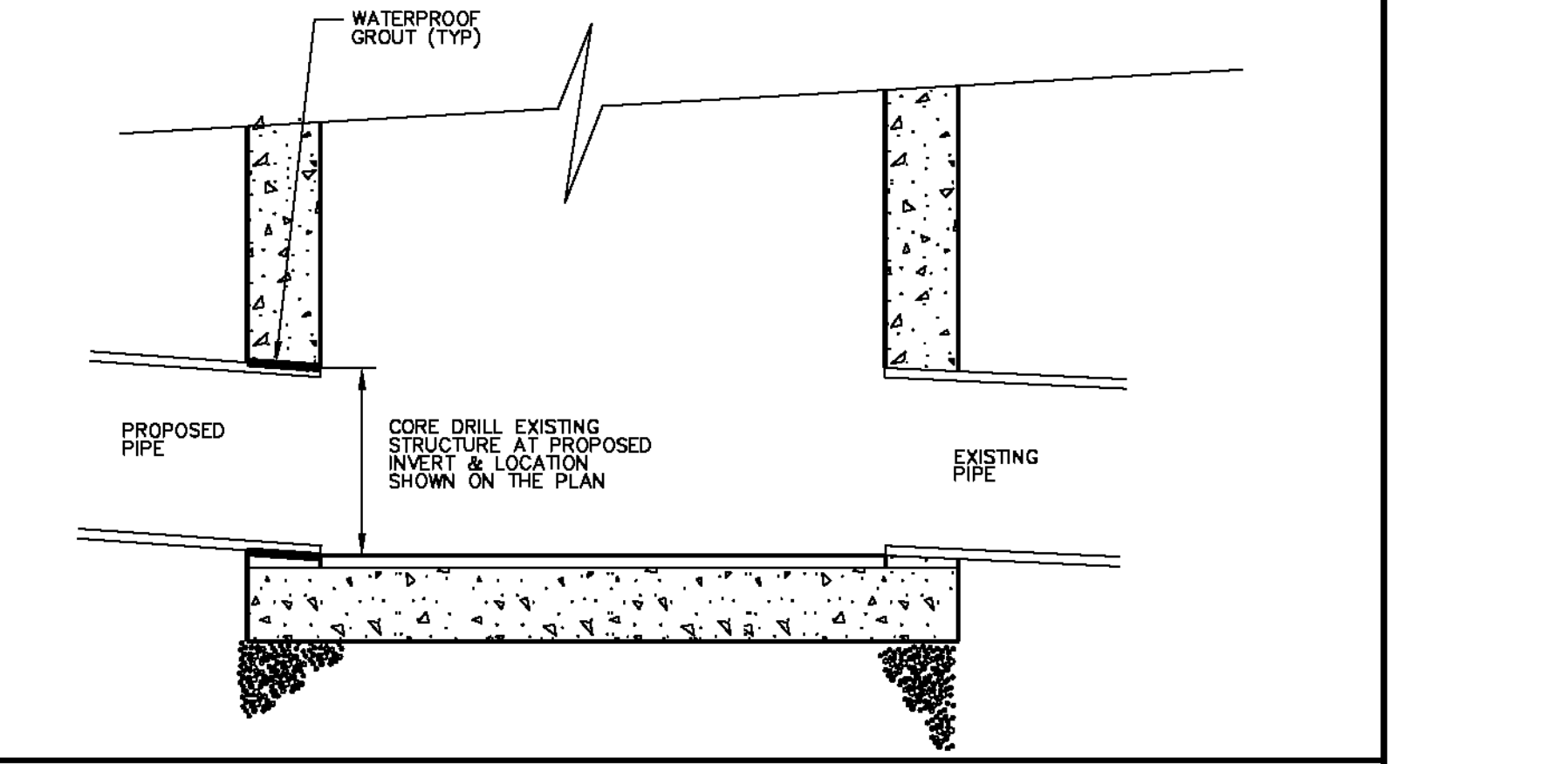


**PENNDOT INLET**

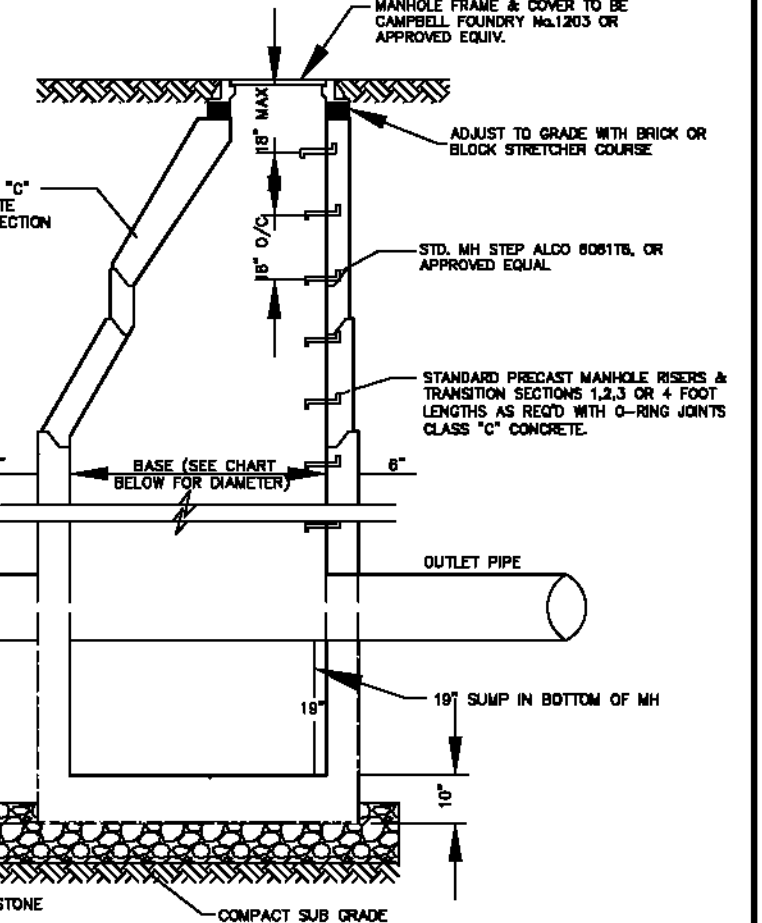
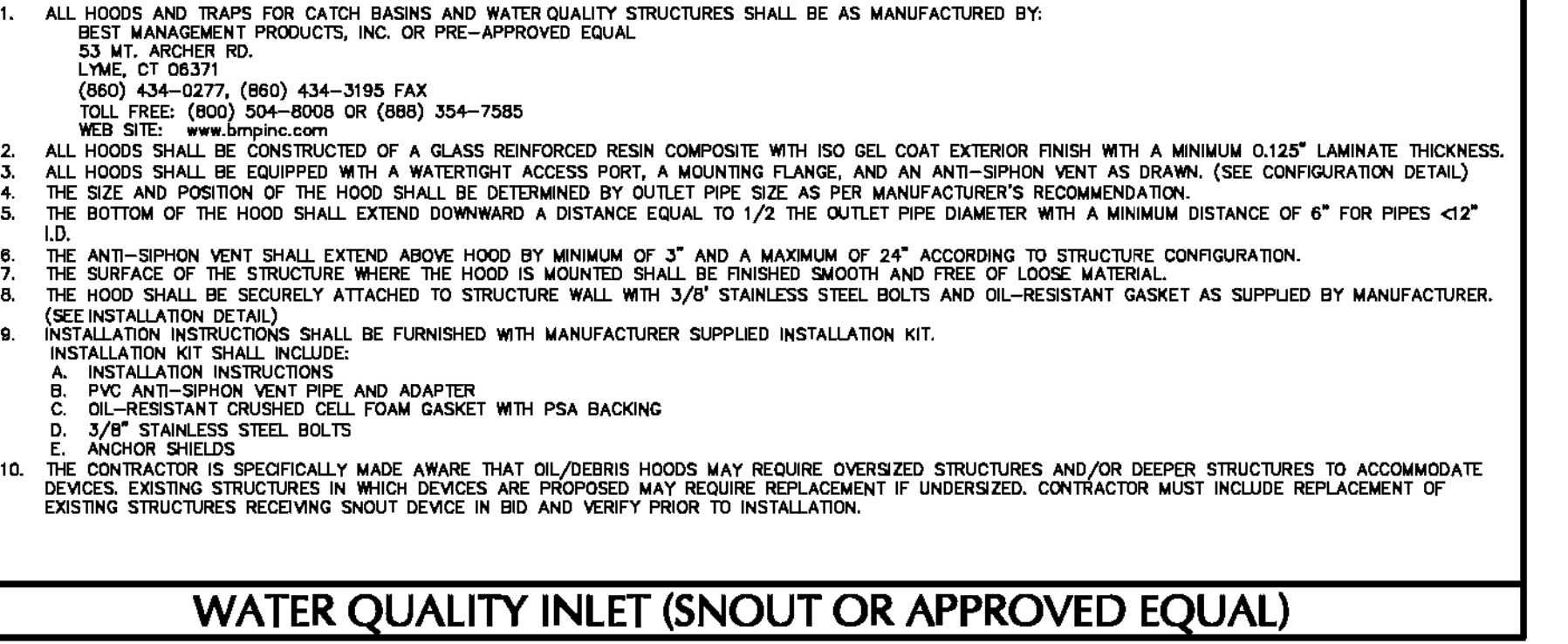
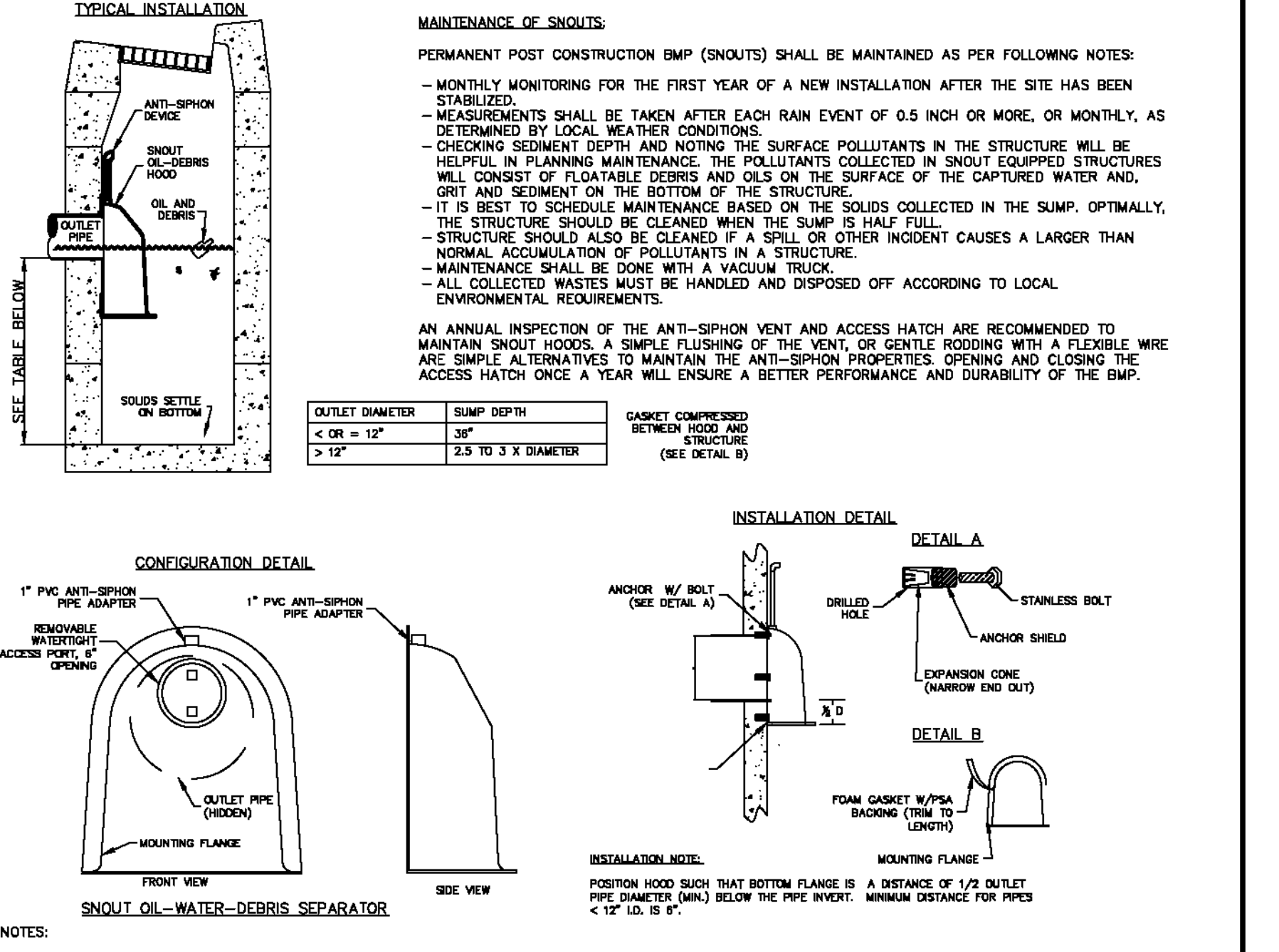
STRUCTURES SHOWN ON THESE DRAWINGS INCLUDING BUT NOT LIMITED DRAINAGE STRUCTURES (INLETS, CATCH BASIN AND MANHOLES), SANITARY MANHOLES, METER PITS AND UNDERGROUND VAULTS ARE NOT STRUCTURALLY DESIGNED. THE DETAILS PROVIDE TYPICAL DIMENSIONS, LOCATION OF PIPE PENETRATIONS, PIPE INVERTS AND GROUND ELEVATIONS AT THE STRUCTURE RIM OR GRATE ONLY. THE STRUCTURAL DESIGN INCLUDING WALL AND SLAB THICKNESS AS WELL AS REINFORCING SHALL BE THE RESPONSIBILITY OF THE PRECAST MANUFACTURER TO MEET STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND HS-20 OR HS-25 LOADING REQUIREMENTS WHEN POSITIONING TRAVELED WAYS. STRUCTURAL DESIGN (WALL AND SLAB THICKNESS AND ALL REINFORCING), WHERE THE UNIT IS WITHIN THE TRAVELED WAY, SHALL BE BY PRECASTER AND SHALL MEET STATE DEPARTMENT OF TRANSPORTATION STANDARDS AND SUPPORT HS-20 OR HS-25 LOADING AS REQUIRED.



**PRECAST MANHOLE**



**CONNECTION TO EXISTING STORM STRUCTURE**



1. PRECAST MANHOLE SHALL BE MANUFACTURED PER LATEST ASTM CODES AND GRS SPECIFICATIONS.
2. THE CONFIGURATION DETAILS SHOWN ARE DISCREPANCY ONLY AND MAY BE VARIED TO CONFORM WITH AN ESTABLISHED MANUFACTURING PROCEDURE.
3. FORMED OR CUT OUT OPENINGS SHALL BE PROVIDED WHERE PIPE INLETS AND OUTLETS ARE BROWN ON THE PLAN.
4. THE TOP OF THE INLET SHALL NOT BE BELOW THE TOP OF THE OUTLET PIPE.
5. REINFORCEMENT SHALL BE CUT AT PIPE OPENINGS.
6. WHERE PIPES DO NOT ENTER OR EXIT RADIALLY, USE NEXT LARGER SIZE MANHOLE.
7. CIRCUMFERENTIAL REINFORCEMENT SIZE AND PLACEMENT SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS TO A MINIMUM DEPTH OF 50 FEET, OVER 20 FOOT DEPTH, CIRCUMFERENTIAL REINFORCEMENT IS REQUIRED TO 24" SQUARE INCHES STEEL REQUIRED PER LINEAR FOOT, TO A MAXIMUM DEPTH OF 30 FEET.
8. FOR PIPE CONNECTIONS, A RUBBER GASKET IN ACCORDANCE WITH ASTM RUBBER GASKET SPECIFICATIONS CLASS O-300 AND GASKET RESIDUALITY IN MANHOLE MAY BE USED AS AN ALTERNATE TO EXPANSIVE MORTAR.

Date Description No.  
 Revisions  
 BRIAN M. CONLON  
 PROFESSIONAL ENGINEER  
 PA Lic. No. PE061782

**LANGAN**  
 Langan Engineering and Environmental Services, Inc.  
 1818 Market Street, Suite 3300  
 Philadelphia, PA 19103  
 T: 215.845.8900 F: 215.845.8901 www.langan.com

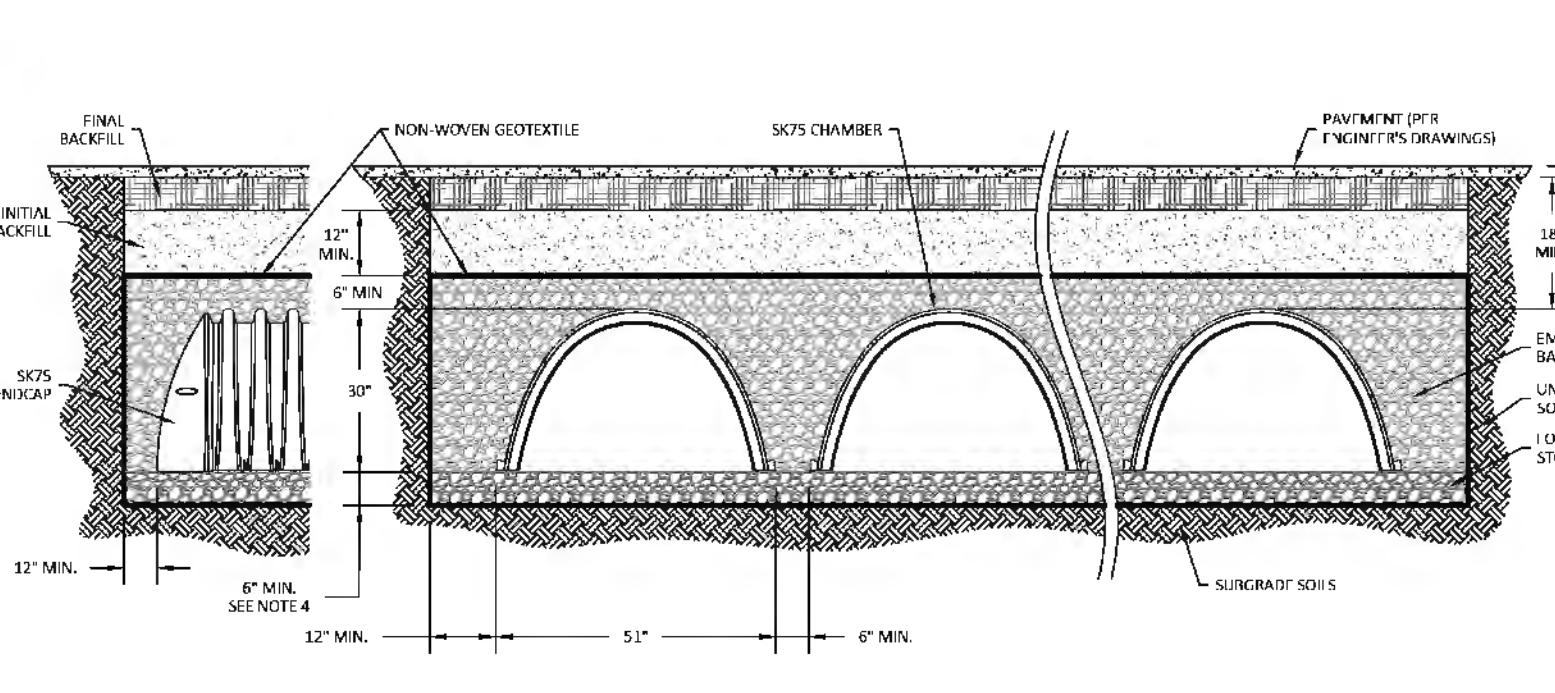
Project  
**NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS**  
 ABINGTON TOWNSHIP

MONTGOMERY COUNTY PENNSYLVANIA  
 Drawing Title

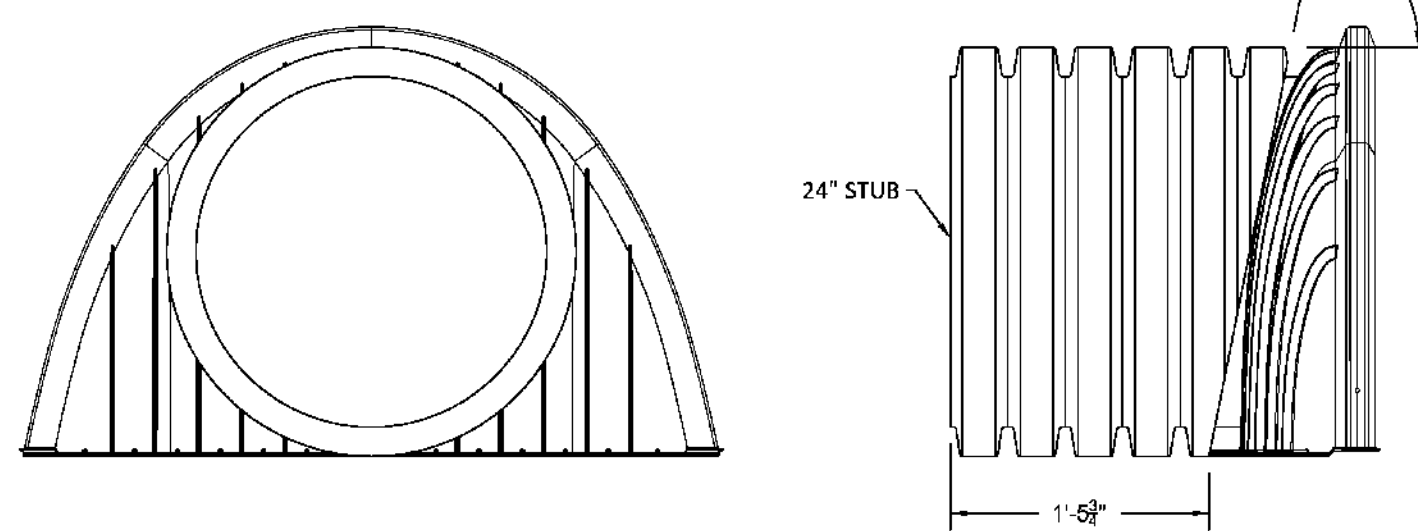
**GRADING AND DRAINAGE NOTES & DETAILS**

Project No. 220154401  
 Date 12 AUGUST 2025  
 Drawn By TTH/AEB  
 Checked By BMC  
 Sheet 11 of 18

Project No. 220154401



- NOTES:**
- CHAMBER SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S LATEST INSTALLATION GUIDELINES.
  - SUBGRADE: TRENCH BOTTOMS WITH UNSTABLE OR UNKINDLY MATERIAL SHALL BE EXCAVATED TO A DEPTH DIRECTED BY THE ENGINEER AND REPLACED WITH SUITABLE MATERIAL. FOR INSTABLE MATERIALS, GEOTEXTILE MAY BE USED TO STABILIZE THE TRENCH BOTTOM, IF DIRECTED BY THE ENGINEER. THE DESIGN ENGINEER IS RESPONSIBLE FOR VERIFYING SUBGRADE SUITABILITY.
  - GEOTEXTILE: AN AASHTO M288 CLASS 2 NON-WOVEN GEOTEXTILE SHALL BE USED TO PREVENT ADJACENT MATERIALS FROM MIGRATING INTO THE FOUNDATION AND EMBASEMENT ZONES.
  - FOUNDATION STONE: SUITABLE MATERIAL SHALL BE CLEAN, CRUSHED, ANGULAR STONE WITH AN AASHTO M43 DESIGNATION BETWEEN #3 AND #57 (AASHTO M43 SIZES NO. 3, 5, 7, 10, 15, 20, 25, 30, 37.5, 47.5, 60, 75, 90, 105, 125, 150, 180, 210, 250, 300, 375, 450, 525, 600, 750, 900, 1050, 1200, 1500, 1800, 2100, 2500, 3000, 3750, 4500, 5250, 6000, 7500, 9000, 10500, 12000, 15000, 18000, 21000, 25000, 30000, 37500, 45000, 52500, 60000, 75000, 90000, 105000, 120000, 150000, 180000, 210000, 250000, 300000, 375000, 450000, 525000, 600000, 750000, 900000, 1050000, 1200000, 1500000, 1800000, 2100000, 2500000, 3000000, 3750000, 4500000, 5250000, 6000000, 7500000, 9000000, 10500000, 12000000, 15000000, 18000000, 21000000, 25000000, 30000000, 37500000, 45000000, 52500000, 60000000, 75000000, 90000000, 105000000, 120000000, 150000000, 180000000, 210000000, 250000000, 300000000, 375000000, 450000000, 525000000, 600000000, 750000000, 900000000, 1050000000, 1200000000, 1500000000, 1800000000, 2100000000, 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NOTE: ALL FITTING DIMENSIONS ARE FOR REFERENCE ONLY.

NOTES:  
 1. ALL 24" PP FITTINGS ARE SOLID PIPE.  
 2. ALL GEOMETRIC TOLERANCES IN ACCORDANCE WITH AASHTO SPECIFICATIONS.  
 3. ALL PP MATERIALS IN ACCORDANCE WITH AASHTO M250.  
 4. ALL DIMENSIONS ARE NOMINAL, UNLESS OTHERWISE NOTED.  
 5. ALL CUT LENGTHS SHOULD BE FIELD VERIFIED FOR LENGTH.

FOR APPROVAL ONLY  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 NOT FOR CONSTRUCTION

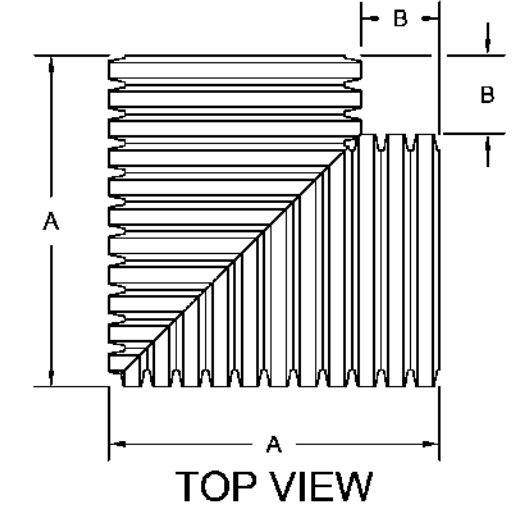
FITTING "A"  
 DETAIL  
 (1) REQUIRED

**LANE**

NOBLE TOWN CENTER REDEV. - SOUTH PARKING  
 MONTGOMERY CO., PA  
 LYONS & HOHL  
 SK75 STORMKEEPER SYSTEM  
 LANE ENTERPRISES, INC.

PROJECT: N.T.S. / N.T.S.  
 NUMBER: CNF / CNF  
 DATE: 07-22-2025 / 07-22-2025  
 REVISIONS: C2807REV1 / C2807REV1

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TOP VIEW

PIPE SIZE	PART #	A	B
4"	HDFT04EL90/S	6.25"	1.50"
6"	HDFT06EL90/S	10.50"	3.50"
8"	HDFT08EL90/S	12.50"	3.00"
10"	HDFT10EL90/S	15.25"	3.25"
12"	HDFT12EL90/S	19.00"	4.50"
15"	HDFT15EL90/S	24.25"	6.75"
18"	HDFT18EL90/S	28.50"	7.00"
24"	HDFT24EL90/S	37.75"	9.75"
30"	HDFT30EL90/S	45.25"	10.75"
36"	HDFT36EL90/S	52.50"	11.50"
42"	HDFT42EL90/S	61.00"	13.50"
48"	HDFT48EL90/S	64.50"	10.00"
60"	HDFT60EL90/S	78.25"	11.75"

NOTE: ALL FITTING DIMENSIONS ARE FOR REFERENCE ONLY.

NOTES:  
 1. ALL 15" HDPE FITTINGS ARE SOLID PIPE.  
 2. ALL GEOMETRIC TOLERANCES IN ACCORDANCE WITH AASHTO SPECIFICATIONS.  
 3. ALL HDPE MATERIALS IN ACCORDANCE WITH AASHTO M250.  
 4. ALL DIMENSIONS ARE NOMINAL, UNLESS OTHERWISE NOTED.  
 5. ALL CUT LENGTHS SHOULD BE FIELD VERIFIED FOR LENGTH.

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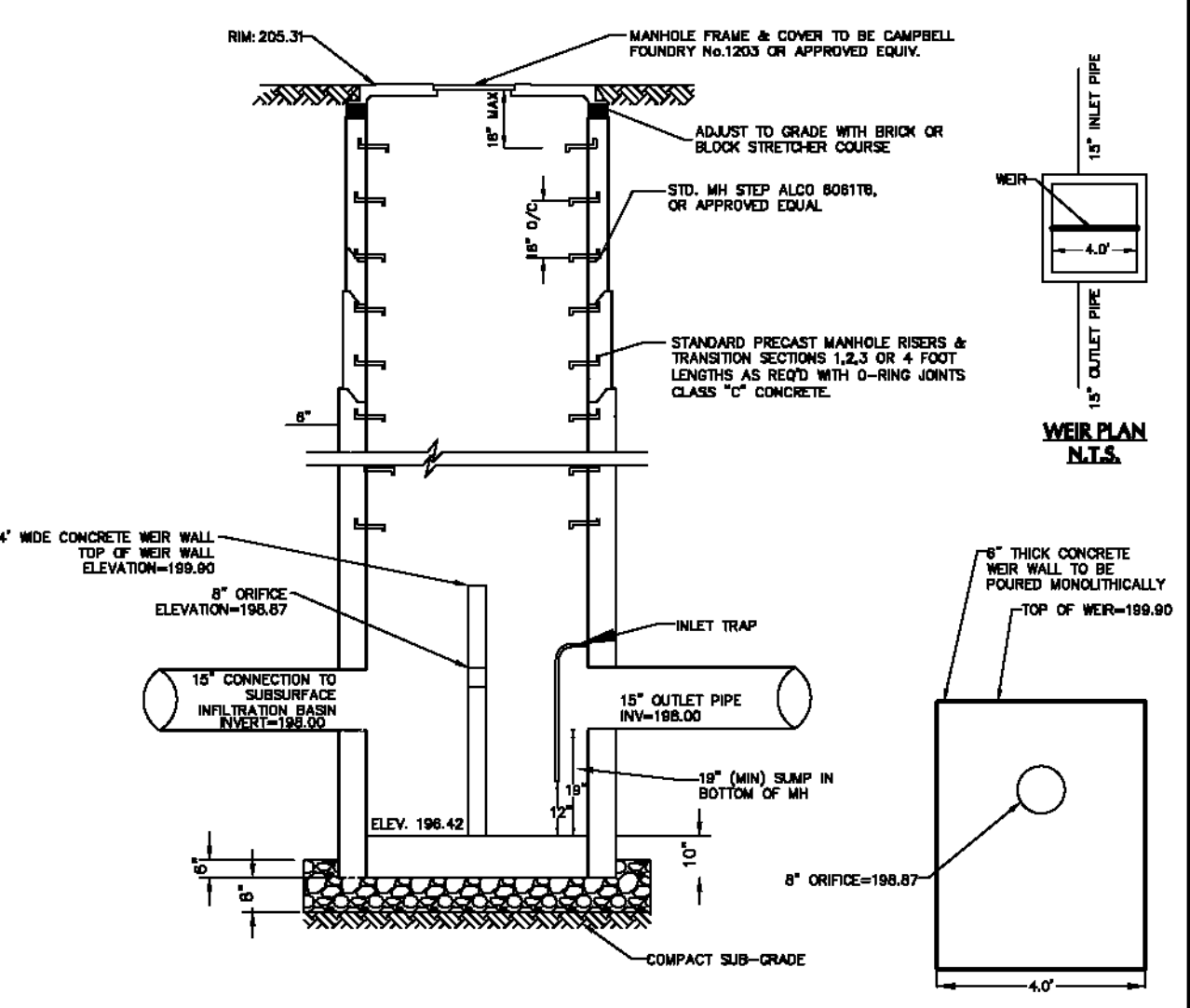
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 DETAIL  
 (2) REQUIRED

**LANE**

NOBLE TOWN CENTER REDEV. - SOUTH PARKING  
 MONTGOMERY CO., PA  
 LYONS & HOHL  
 SK75 STORMKEEPER SYSTEM  
 LANE ENTERPRISES, INC.

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 REVISIONS: C2807REV1 / C2807REV1

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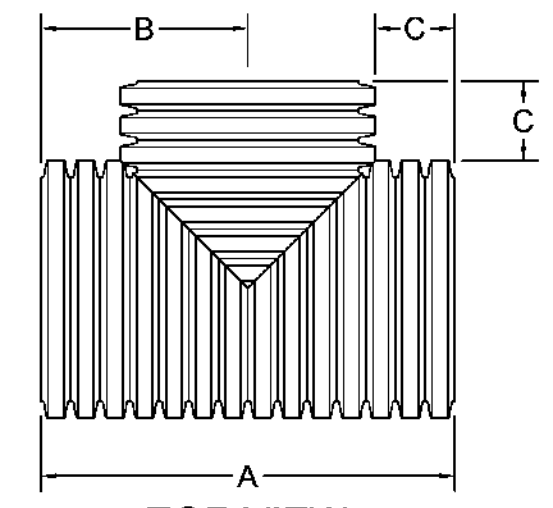


DETAIL FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO PROVIDE STRUCTURAL DESIGN AND DETAIL TO ENGINEER FOR REVIEW.

**OUTLET CONTROL STRUCTURE**

WER PLAN N.T.S.

WER ELEVATION



TOP VIEW

PIPE SIZE	PART #	A	B	C
4"	HDFT04T/S	7.75"	4.00"	1.50"
6"	HDFT06T/S	14.00"	7.00"	3.50"
8"	HDFT08T/S	15.50"	7.75"	3.00"
10"	HDFT10T/S	18.50"	9.25"	3.25"
12"	HDFT12T/S	23.50"	11.75"	4.50"
15"	HDFT15T/S	31.00"	15.50"	6.75"
18"	HDFT18T/S	35.50"	17.75"	7.00"
24"	HDFT24T/S	47.25"	23.50"	9.75"
30"	HDFT30T/S	56.00"	28.00"	10.75"
36"	HDFT36T/S	64.00"	32.00"	11.50"
42"	HDFT42T/S	74.75"	37.25"	13.50"
48"	HDFT48T/S	74.75"	37.25"	10.00"
60"	HDFT60T/S	90.00"	45.00"	11.75"

NOTE: ALL FITTING DIMENSIONS ARE FOR REFERENCE ONLY.

NOTES:  
 1. ALL 15" HDPE FITTINGS ARE SOLID PIPE.  
 2. ALL GEOMETRIC TOLERANCES IN ACCORDANCE WITH AASHTO SPECIFICATIONS.  
 3. ALL HDPE MATERIALS IN ACCORDANCE WITH AASHTO M250.  
 4. ALL DIMENSIONS ARE NOMINAL, UNLESS OTHERWISE NOTED.  
 5. ALL CUT LENGTHS SHOULD BE FIELD VERIFIED FOR LENGTH.

FOR APPROVAL ONLY  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 NOT FOR CONSTRUCTION

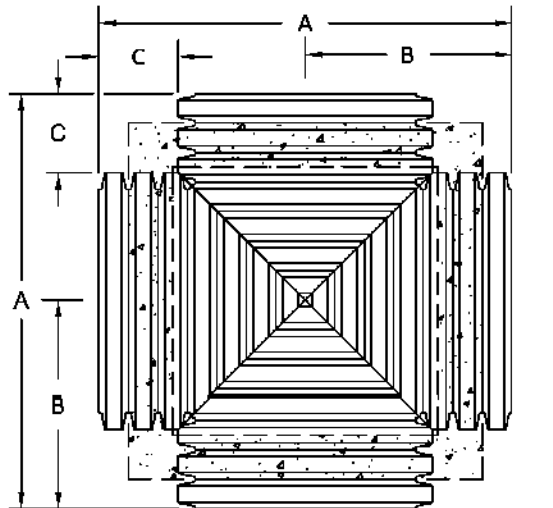
FITTING "B"  
 DETAIL  
 (2) REQUIRED

**LANE**

NOBLE TOWN CENTER REDEV. - SOUTH PARKING  
 MONTGOMERY CO., PA  
 LYONS & HOHL  
 SK75 STORMKEEPER SYSTEM  
 LANE ENTERPRISES, INC.

PROJECT: N.T.S. / N.T.S.  
 NUMBER: CNF / CNF  
 DATE: 07-22-2025 / 07-22-2025  
 REVISIONS: C2807REV1 / C2807REV1

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TOP VIEW

PIPE SIZE	PART #	A	B	C
4"	HDFT04CT/S	7.75"	4.00"	1.50"
6"	HDFT06CT/S	14.00"	7.00"	3.50"
8"	HDFT08CT/S	15.50"	7.75"	3.00"
10"	HDFT10CT/S	18.50"	9.25"	3.25"
12"	HDFT12CT/S	23.50"	11.75"	4.50"
15"	HDFT15CT/S	31.00"	15.50"	6.75"
18"	HDFT18CT/S	35.50"	17.75"	7.00"
24"	HDFT24CT/S	47.25"	23.50"	9.75"
30"	HDFT30CT/S	56.00"	28.00"	10.75"
36"	HDFT36CT/S	64.00"	32.00"	11.50"
42"	HDFT42CT/S	74.75"	37.25"	13.50"
48"	HDFT48CT/S	74.75"	37.25"	10.00"

\* REQUIRES CONCRETE ENCASEMENT TO AT LEAST 6" ABOVE FITTING

NOTE: ALL FITTING DIMENSIONS ARE FOR REFERENCE ONLY.

NOTES:  
 1. ALL 15" HDPE FITTINGS ARE SOLID PIPE.  
 2. ALL GEOMETRIC TOLERANCES IN ACCORDANCE WITH AASHTO SPECIFICATIONS.  
 3. ALL HDPE MATERIALS IN ACCORDANCE WITH AASHTO M250.  
 4. ALL DIMENSIONS ARE NOMINAL, UNLESS OTHERWISE NOTED.  
 5. ALL CUT LENGTHS SHOULD BE FIELD VERIFIED FOR LENGTH.

FOR APPROVAL ONLY  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_  
 NOT FOR CONSTRUCTION

FITTING "D"  
 DETAIL  
 (1) REQUIRED

**LANE**

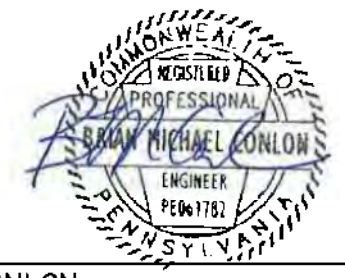
NOBLE TOWN CENTER REDEV. - SOUTH PARKING  
 MONTGOMERY CO., PA  
 LYONS & HOHL  
 SK75 STORMKEEPER SYSTEM  
 LANE ENTERPRISES, INC.

PROJECT: N.T.S. / N.T.S.  
 NUMBER: CNF / CNF  
 DATE: 07-22-2025 / 07-22-2025  
 REVISIONS: C2807REV1 / C2807REV1

13 OF 13

**STORMKEEPER SYSTEM - SUBSURFACE STORMWATER MANAGEMENT SYSTEM**

Date	Description	No.
Revisions		



BRIAN M. CONLON  
 PROFESSIONAL ENGINEER  
 PA Lic. No. PE061782

**LANGAN**

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Project  
**NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS**  
 ABINGTON TOWNSHIP  
 MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title  
**GRADING AND DRAINAGE NOTES & DETAILS III**

Project No. <b>220154401</b>	<b>CG-503</b>
Date <b>12 AUGUST 2025</b>	
Drawn By <b>TFH/AEB</b>	
Checked By <b>BMC</b>	

Sheet 13 of 18

GENERAL E&S NOTES

- 1. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES...
2. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION...
3. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG OR EQUIVALENT SEDIMENT REMOVAL FACILITY...
4. FAILURE TO CORRECTLY INSTALL E&S BMPs, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE EARTH DISTURBANCE ACTIVITY...
5. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS...
6. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF ANY EXCESS MATERIAL AND MAKE SURE THE SITE/RECEIVING THE EXCESS HAS AN APPROVED AND FULLY IMPLEMENTED EROSION AND SEDIMENT CONTROL PLAN...
7. CLEAN FILL IS DEFINED AS UNCONTAMINATED, NON-WATER SOLUBLE, NON-DECOMPOSABLE, INERT, SOLID MATERIAL...
8. ANY PLACEMENT OF CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE FORM PP-001 TO CERTIFY THE ORIGINAL OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING...
9. ENVIRONMENTAL DUE DILIGENCE MUST BE PERFORMED TO DETERMINE IF THE FILL MATERIALS ASSOCIATED WITH THE PROJECT QUALIFY AS CLEAN FILL...
10. COPIES OF ALL DISPOSAL MANIFESTS ISSUED BY THE ACCEPTING LANDFILL FACILITY ADDRESSING THE FILL MATERIALS REMOVED FROM THE SITE SHALL BE SUBMITTED TO THE TOWNSHIP...
11. AFTER THE ENTIRE SITE IS STABILIZED, CONTRACTOR SHOULD ADJUST ALL GRADES, AND ALL PROPOSED AND EXISTING STORM DRAINAGE PIPES, TO MATCH WITH THOSE ON FINAL APPROVED SET OF PLANS...
12. IN AREAS OF EXCAVATION, ALL EXISTING UTILITIES TO REMAIN SHALL BE CHECKED FOR PROPER COVER AS REQUIRED BY THE UTILITY OWNER...

CONSTRUCTION SEQUENCE

- 1. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE...
2. AT LEAST 7 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING...
3. AT LEAST 3 DAYS BEFORE STARTING ANY EARTH DISTURBANCE ACTIVITIES, ALL CONTRACTORS INVOLVED IN THOSE ACTIVITIES SHALL NOTIFY THE PENNSYLVANIA ONE CALL SYSTEM...
4. MARK OUT THE LIMIT OF DISTURBANCE FOR CONSTRUCTION ACTIVITIES AS SHOWN ON DRAWINGS...
5. INSTALL TEMPORARY CONSTRUCTION FENCE AS SHOWN ON THIS SHEET AND AS DIRECTED BY THE CONSTRUCTION MANAGER...
6. INSTALL COMPOST FILTER SOCK AND INLET PROTECTION ON EXISTING INLETS AS SHOWN ON THE PLANS...
7. COORDINATE WITH SITE OWNER AND INSTALL TEMPORARY ON-SITE TRAFFIC SIGNAGE AND STRIPING WITHIN THE PARKING LOT...
8. THE EXISTING PAVEMENT MAY BE USED FOR CONSTRUCTION ACCESS IN LIEU OF A ROCK CONSTRUCTION ENTRANCE...
9. INSTALL CONCRETE WASHOUT IN ACCORDANCE WITH THE DETAIL ON DRAWING CE-501...
10. PROTECT INFILTRATION BASIN AREA FROM COMPACTION PRIOR TO INSTALLATION...
11. REMOVE EXISTING FEATURES (CURBING, ASPHALT, SIDEWALK ETC.) TO LIMITS INDICATED ON DEMOLITION PLAN...
12. DEMOLISH THE EXISTING UTILITIES TO LIMITS INDICATED...
13. ROUGH GRADE SOIL IN PARKING AND DRIVEWAY AREAS TO SUBGRADE ELEVATIONS...
14. INSTALL STORM DRAINAGE SYSTEMS AS SITE IS BROUGHT TO GRADE...
15. BEFORE DISPOSING OF SOIL OR RECEIVING BORROW FOR THE SITE, THE OPERATOR MUST ASSURE THAT EACH SPILL OR BORROW AREA HAS AN EROSION AND SEDIMENT CONTROL PLAN...
16. COMPLETE CONSTRUCTION OF THE STORM DRAINAGE SYSTEMS...
17. SWEEP THE PARKING LOTS AND FLUSH OR LET THE STORM SEWER CONVEYANCE SYSTEM PRIOR TO REMOVING ANY TEMPORARY SEDIMENT CONTROL MEASURES...
18. CONSTRUCT THE INFILTRATION BASIN DURING THE FINAL PHASE OF SITE CONSTRUCTION...
19. EXCAVATE AND PREPARE INFILTRATION BASIN BED, THE INFILTRATION BED SHOULD BE UN-COMPACTED AND FREE FROM ROCKS AND DEBRIS...
20. EXCAVATE BOTTOM OF BASIN TO 0.5 FEET BELOW PROPOSED FINAL GRADE...
21. INSTALL SUITABLE PERMEABLE SOILS OVER BASIN BOTTOM TO FINAL GRADE...
22. INSTALL CONCRETE SIDEWALK, CONTINUE INSTALLATION OF UTILITIES INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, TELEPHONE, WATER, SANITARY SEWER AND REMAINING STORM DRAINAGE WITH INLET PROTECTION...
23. REFER TO DRAWINGS FOR SOIL EROSION AND SEDIMENT CONTROL MAINTENANCE PROGRAM...
24. INSTALL CONCRETE CURBING WITHIN PARKING AREAS AND DRIVEWAYS...
25. ONCE PERMANENT MEASURES HAVE BEEN INSTALLED, TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED...
26. INSTALL SIGNS AS SHOWN ON SITE CONSTRUCTION PLAN, DRAWING CS-101...
27. THE CONTRACTOR SHALL REMOVE, DISPOSE OR RECYCLE ALL CONSTRUCTION MATERIALS REMOVED FROM THE SITE...
28. PLACE WEARING COURSE FOR ALL AREAS THAT ARE COMPLETED, BEGIN STRIPING OF PARKING AREAS AND ACCESS DRIVES...

Table with columns: MAP SYMBOL, DESCRIPTION, LIMITATIONS, SUITABILITY AS SOURCE OF, ENGINEERING CHARACTERISTICS, CONSTRUCTION TECHNIQUES/SPECIAL CONSIDERATIONS. Rows include Ugb (Urban Land 2 to 10 Percent Slopes) and Ugd (Urban Land 6 to 10 Percent Slopes).

STABILIZATION SPECIFICATIONS

- 1. UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY WHEREAS CESSATION OF EARTH DISTURBANCE ACTIVITIES WILL EXCEED 4 DAYS...
2. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION...
3. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN...
4. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES...
5. TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING, FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL...
6. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE, THE OPERATOR SHALL STABILIZE THE DISTURBED AREAS...
7. AN EROSION CONTROL BLANKET WILL BE INSTALLED ON ALL DISTURBED SLOPES 3:1 OR STEEPER...

MAINTENANCE PROGRAM

- 1. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT CONTROL BMPs MUST BE MAINTAINED PROPERLY...
2. ANY SEDIMENT REMOVED FROM BMPs DURING CONSTRUCTION WILL BE RETURNED TO UPLAND AREAS ON SITE...
3. A LOG SHOWING THE DATES THAT E&S BMPs WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THAT THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE...

LEGEND section listing symbols for PROPERTY LINE, LIMIT OF DISTURBANCE, EXISTING WATER LINE, EXISTING SAN SEWER, EXISTING STORM SEWER, EXISTING ELECTRIC, EXISTING TELEPHONE, EXISTING GAS, EXISTING CONTOUR, PROPOSED CONTOUR, INLET PROTECTION, SOIL TYPE, SOIL BOUNDARY LINE, CONCRETE WASHOUT, PROPOSED STORM PIPE, PROPOSED STORM INLET.

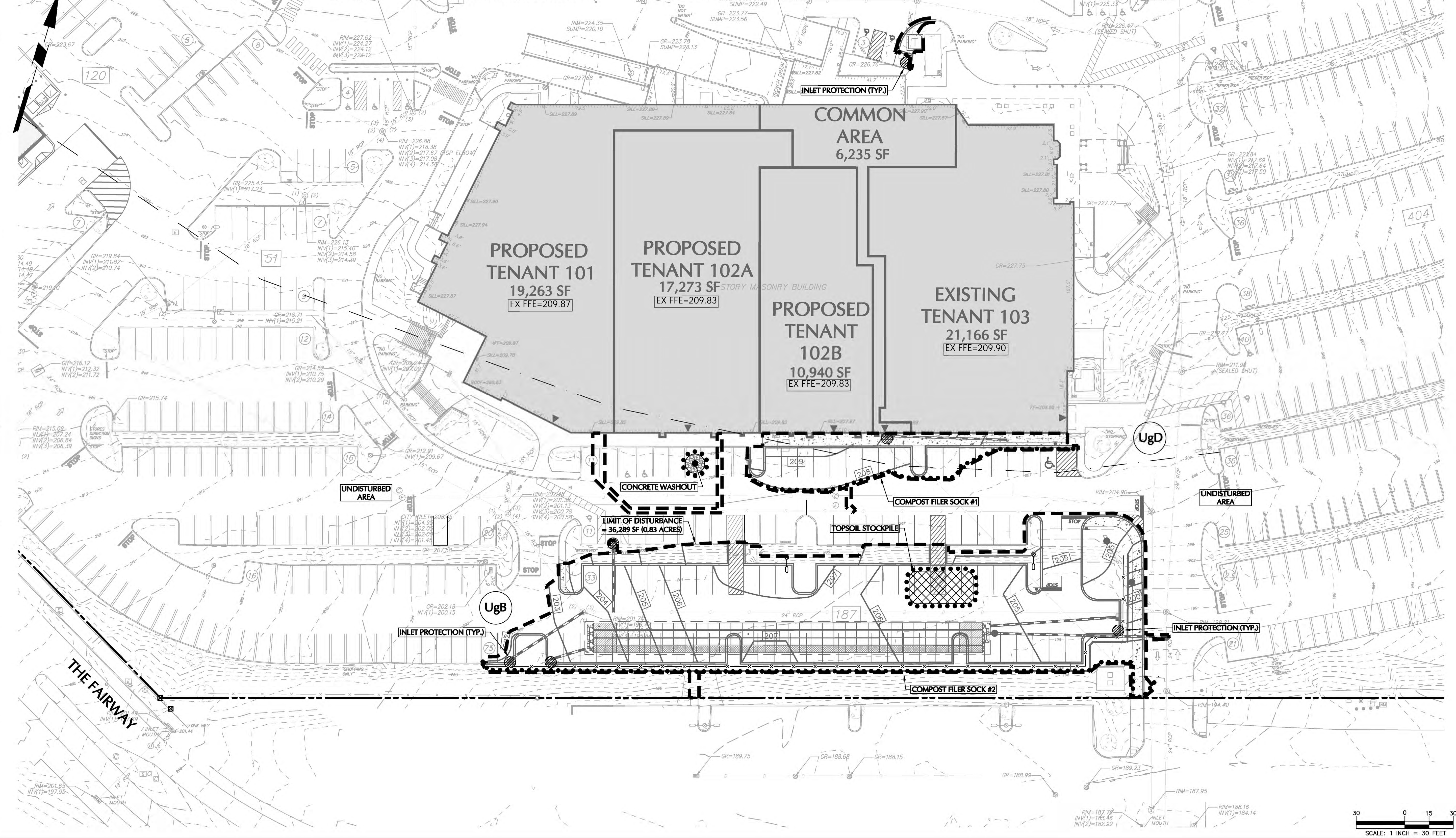
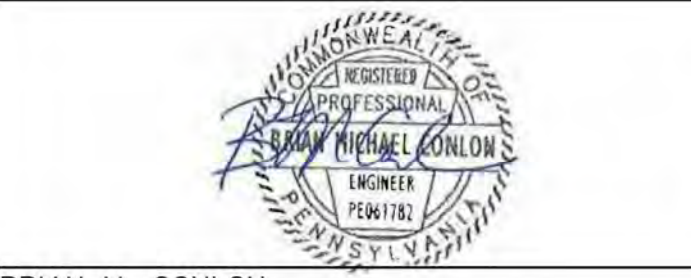


Table with columns: Date, Description, No. Header for Revisions section.



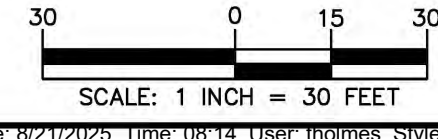
BRIAN M. CONLON PROFESSIONAL ENGINEER PA Lic. No. PE061782

LANGAN Langan Engineering and Environmental Services, Inc. 1818 Market Street, Suite 3300 Philadelphia, PA 19103 T: 215.845.8900 F: 215.845.8901 www.langan.com

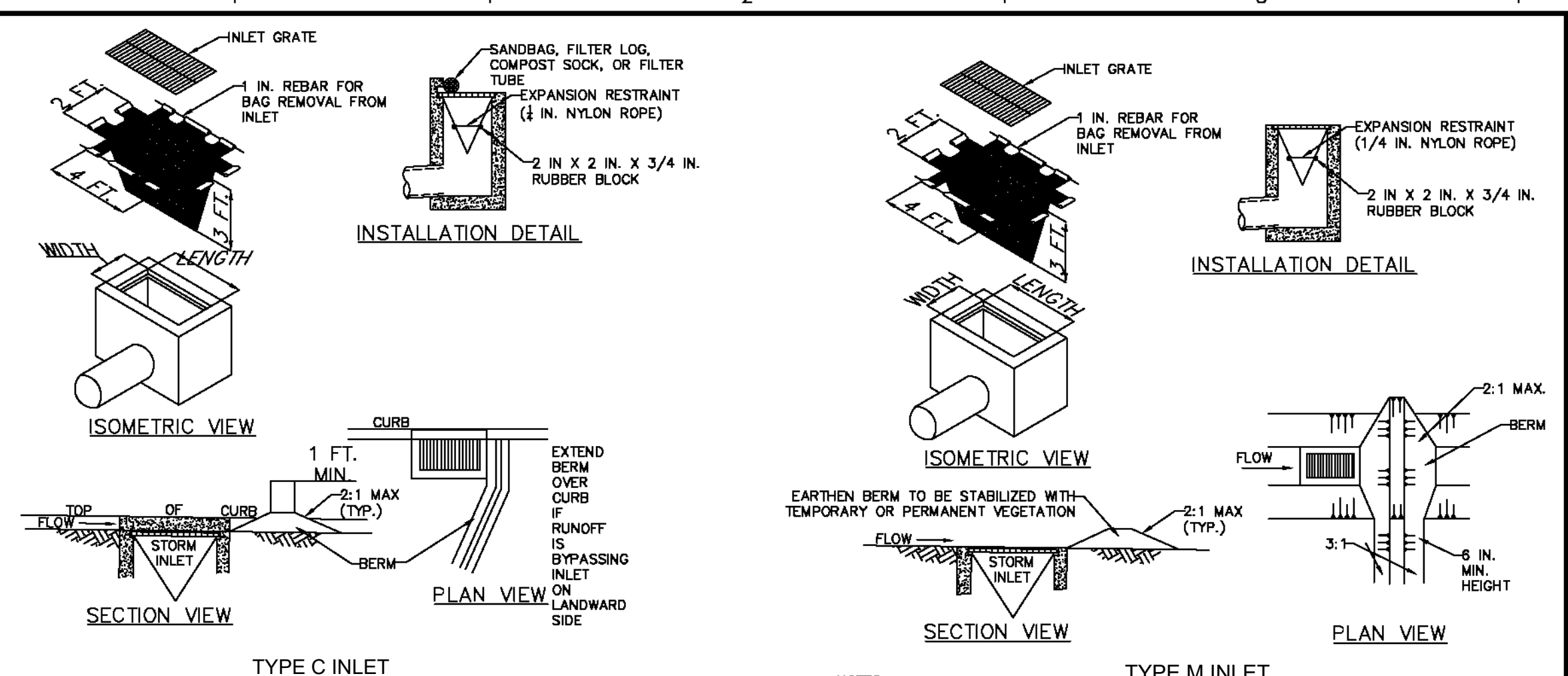
Project NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS ABINGTON TOWNSHIP MONTGOMERY COUNTY PENNSYLVANIA Drawing Title

SOIL EROSION AND SEDIMENT CONTROL PLAN

Table with Project No. 220154401, Date 12 AUGUST 2025, Drawn By TFH/AEB, Checked By BMC, Sheet 14 of 18, CE-101.



Vertical text on the right edge: Project No. 220154401, Date: 8/21/2025, User: jhones, Style: Table, Langan, Layout: CE-101, Document Code: 220154401-FC05-EB01-100



**INSTALLATION DETAIL**

**TYPE C INLET**

**TYPE M INLET**

**NOTES:**

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

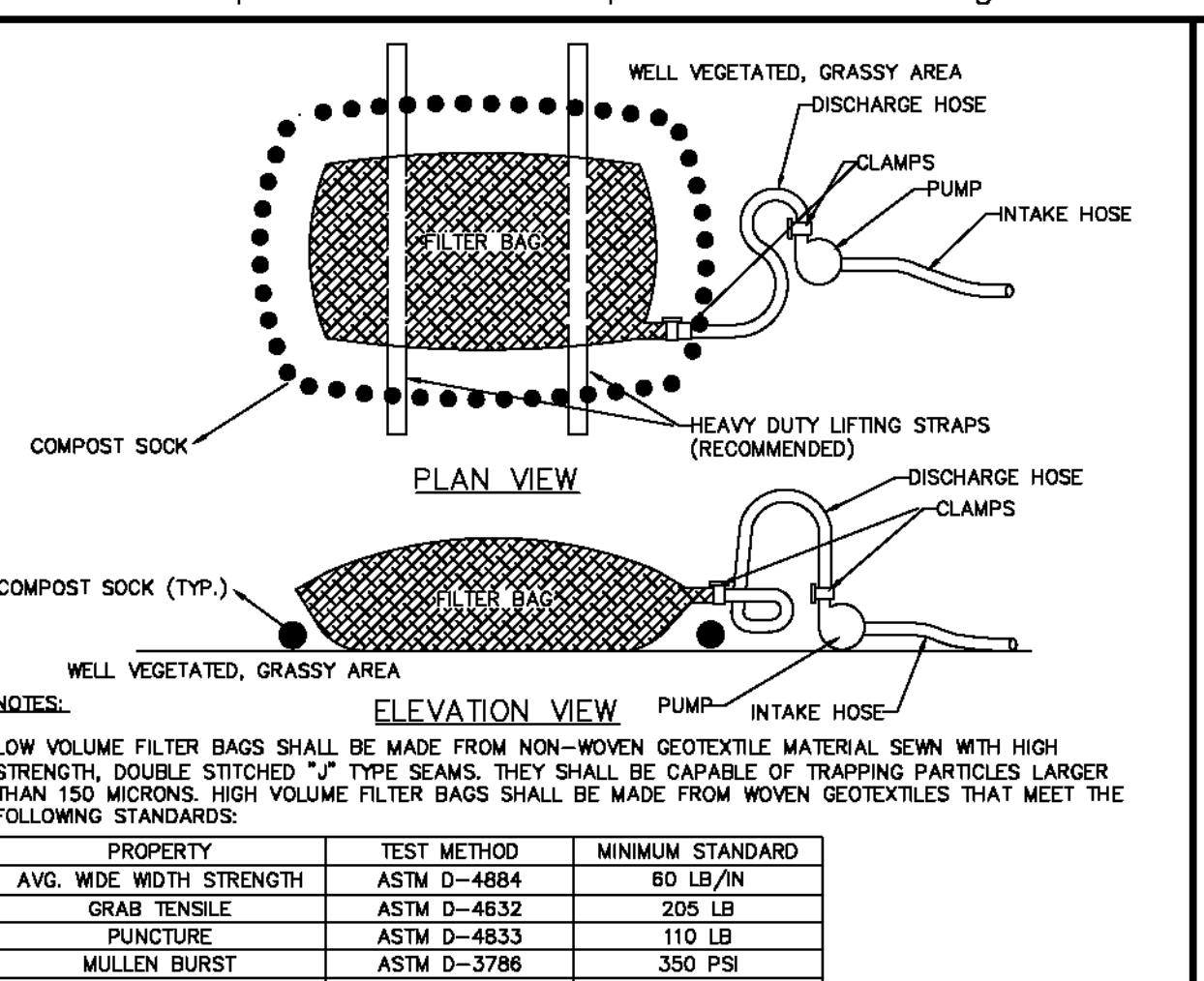
ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.

AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS, A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.

INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

NOT TO SCALE



**PUMPED WATER FILTER BAG WITH COMPOST SOCK**

**NOTES:**

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

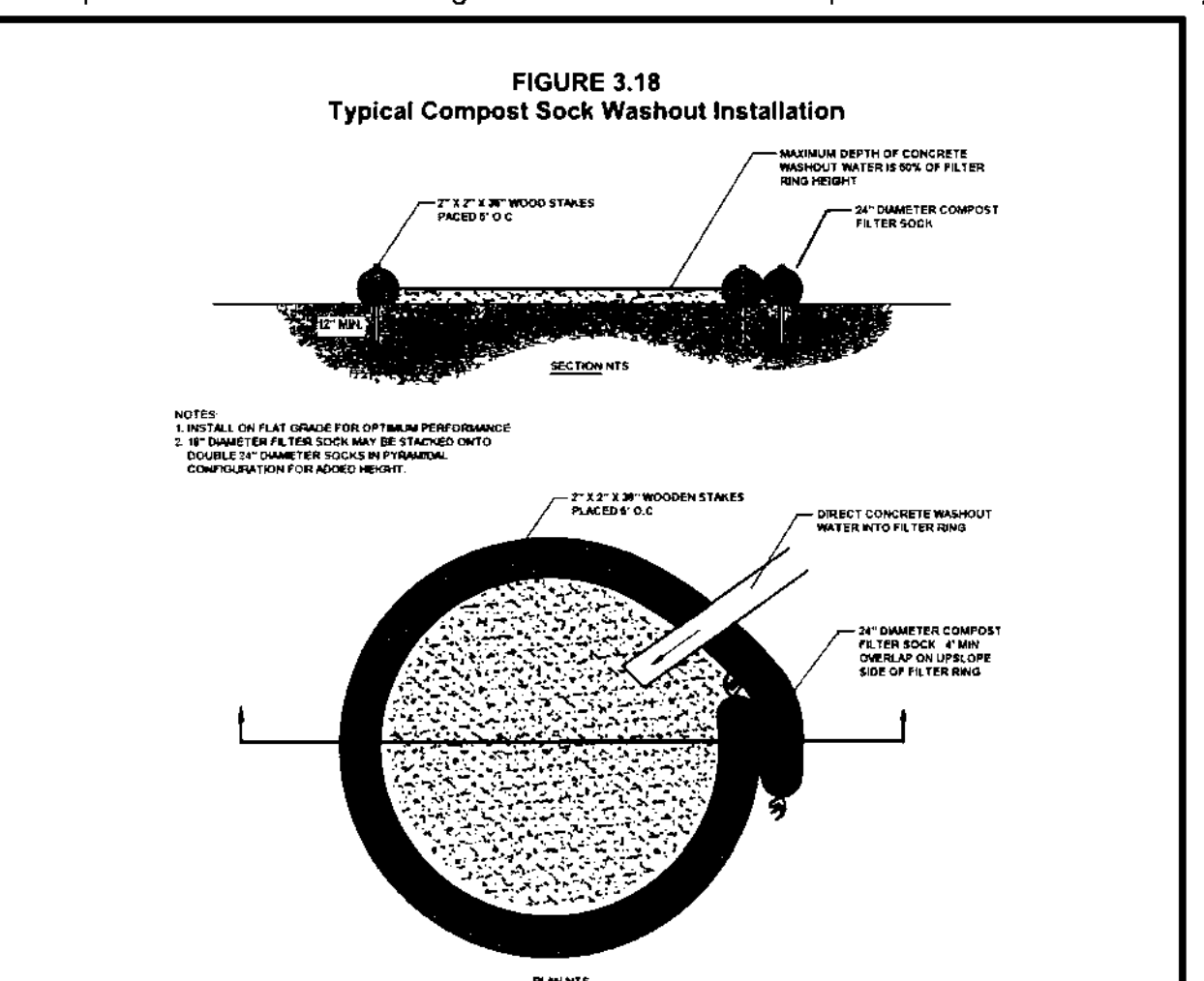
BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS, WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5% FOR SLOPES EXCEEDING 5% CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HO OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCORED.

INLET FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.



**CONCRETE WASHOUT**

**NOTES:**

COMPOST SOCKS SHALL BE STAKED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AROUND PERIMETER OF THE GEOMEMBRANE TO FORM A RING. THE ENDS OF THE SOCK SHALL BE LOCATED AT THE UPSLOPE CORNER.

CONTRACTOR SHALL ENSURE CONTINUOUS CONTACT OF THE SOCK WITH THE GEOMEMBRANE AT ALL LOCATIONS.

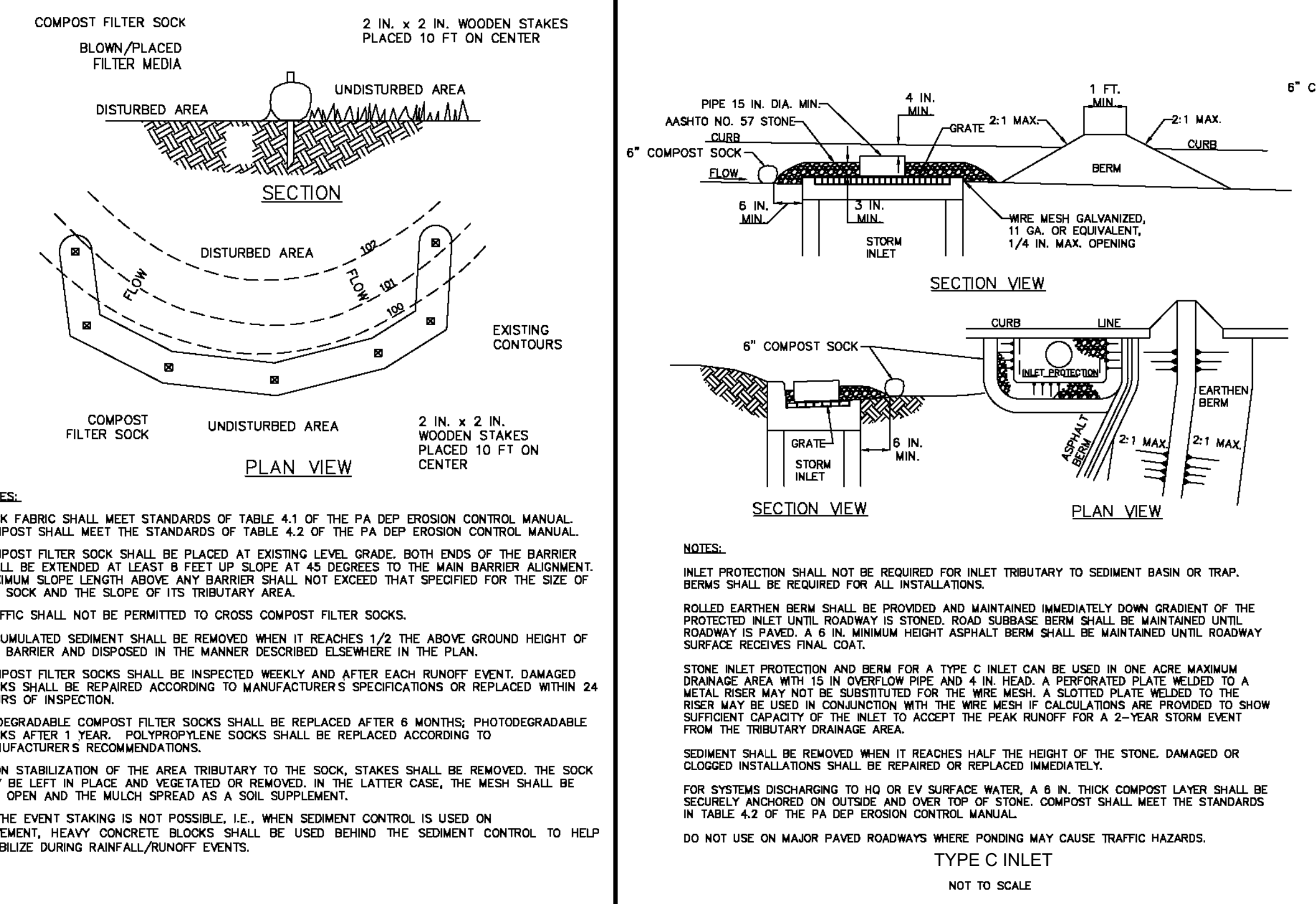
WHERE NECESSARY, SOCKS MAY BE STACKED AND STAKED SO AS TO FORM A TRIANGULAR CROSS-SECTION.

CONCRETE WASHOUT FACILITIES SHALL BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.

ACCUMULATED MATERIALS SHALL BE REMOVED WHEN THEY REACH 75% CAPACITY.

PLASTIC LINERS SHALL BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.

**FILTER BAG INLET PROTECTION (DRAINAGE AREA <0.5 ACRES)**



**COMPOST FILTER SOCK**

**STONE & COMPOST INLET PROTECTION (DRAINAGE AREA > 0.5 ACRES)**

**NOTES:**

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 6 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

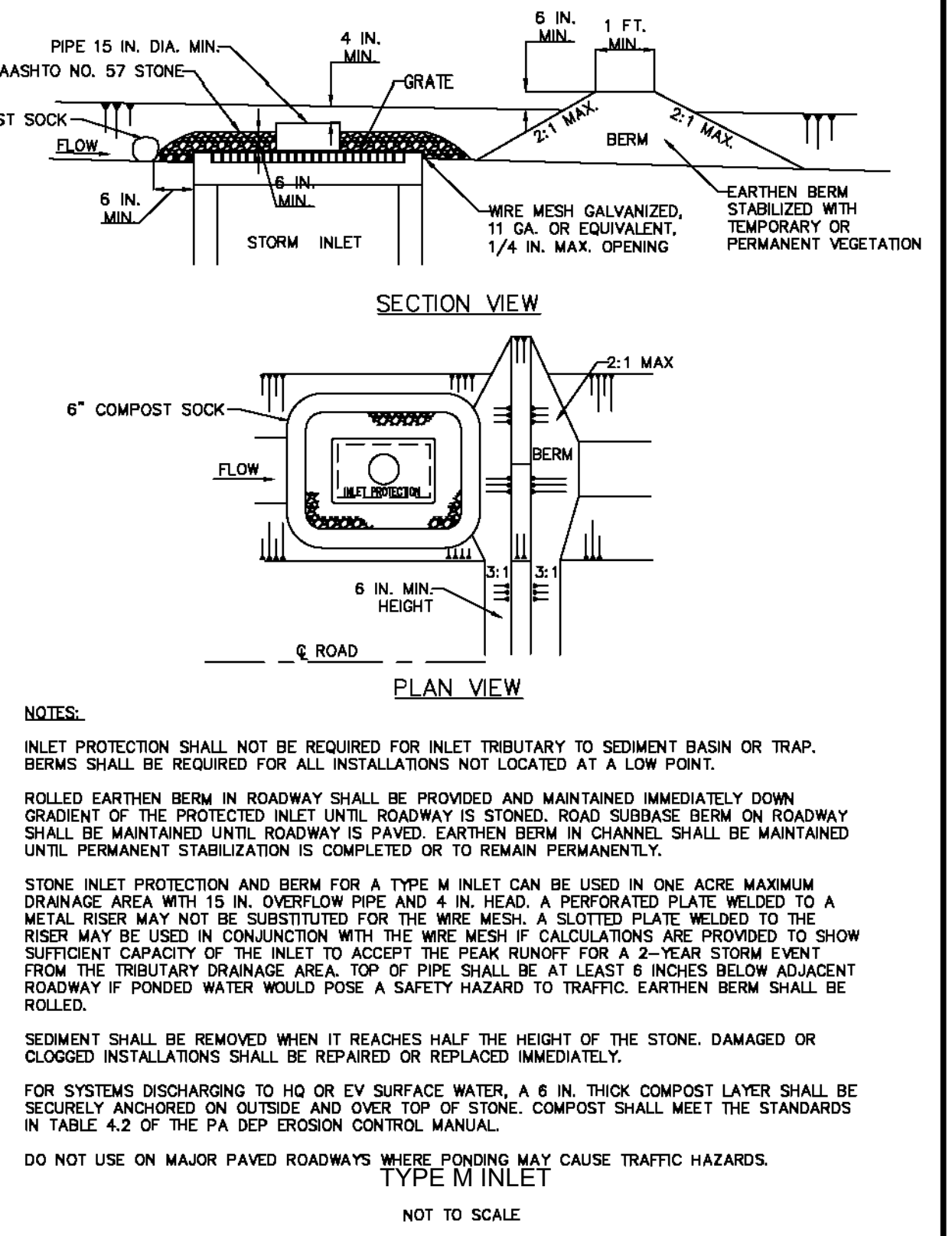
COMPOST FILTER SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

IN THE EVENT STAKING IS NOT POSSIBLE, I.E., WHEN SEDIMENT CONTROL IS USED ON PAVEMENT, HEAVY CONCRETE BLOCKS SHALL BE USED BEHIND THE SEDIMENT CONTROL TO HELP STABILIZE DURING RAINFALL/RUNOFF EVENTS.

**PUMPED WATER FILTER BAG WITH COMPOST SOCK**



**NOTES:**

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT A LOW POINT.

ROLLED EARTHEN BERM IN ROADWAY SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR TO REMAIN PERMANENTLY.

STONE INLET PROTECTION AND BERM FOR A TYPE M INLET CAN BE USED IN ONE ACRE MAXIMUM DRAINAGE AREA WITH 15 IN. OVERFLOW PIPE AND 4 IN. HEAD. A PERFORATED PLATE WELDED TO A METAL RISER MAY NOT BE SUBSTITUTED FOR THE WIRE MESH. A SLOTTED PLATE WELDED TO THE RISER MAY BE USED IN CONJUNCTION WITH THE WIRE MESH IF CALCULATIONS ARE PROVIDED TO SHOW SUFFICIENT CAPACITY OF THE INLET TO ACCEPT THE PEAK RUNOFF FOR A 2-YEAR STORM EVENT FROM THE TRIBUTARY DRAINAGE AREA. TOP OF PIPE SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADWAY IF PONDING WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC. EARTHEN BERM SHALL BE ROLLED.

SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

FOR SYSTEMS DISCHARGING TO HO OR EV SURFACE WATER, A 6 IN. THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE STANDARDS IN TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

**COMPOST FILTER SOCK**

**STONE & COMPOST INLET PROTECTION (DRAINAGE AREA > 0.5 ACRES)**

**NOTES:**

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT A LOW POINT.

ROLLED EARTHEN BERM IN ROADWAY SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR TO REMAIN PERMANENTLY.

STONE INLET PROTECTION AND BERM FOR A TYPE M INLET CAN BE USED IN ONE ACRE MAXIMUM DRAINAGE AREA WITH 15 IN. OVERFLOW PIPE AND 4 IN. HEAD. A PERFORATED PLATE WELDED TO A METAL RISER MAY NOT BE SUBSTITUTED FOR THE WIRE MESH. A SLOTTED PLATE WELDED TO THE RISER MAY BE USED IN CONJUNCTION WITH THE WIRE MESH IF CALCULATIONS ARE PROVIDED TO SHOW SUFFICIENT CAPACITY OF THE INLET TO ACCEPT THE PEAK RUNOFF FOR A 2-YEAR STORM EVENT FROM THE TRIBUTARY DRAINAGE AREA. TOP OF PIPE SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADWAY IF PONDING WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC. EARTHEN BERM SHALL BE ROLLED.

SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

FOR SYSTEMS DISCHARGING TO HO OR EV SURFACE WATER, A 6 IN. THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE STANDARDS IN TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

**CONCRETE WASHOUT**

**NOTES:**

COMPOST SOCKS SHALL BE STAKED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AROUND PERIMETER OF THE GEOMEMBRANE TO FORM A RING. THE ENDS OF THE SOCK SHALL BE LOCATED AT THE UPSLOPE CORNER.

CONTRACTOR SHALL ENSURE CONTINUOUS CONTACT OF THE SOCK WITH THE GEOMEMBRANE AT ALL LOCATIONS.

WHERE NECESSARY, SOCKS MAY BE STACKED AND STAKED SO AS TO FORM A TRIANGULAR CROSS-SECTION.

CONCRETE WASHOUT FACILITIES SHALL BE INSPECTED DAILY. DAMAGED OR LEAKING WASHOUTS SHOULD BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.

ACCUMULATED MATERIALS SHALL BE REMOVED WHEN THEY REACH 75% CAPACITY.

PLASTIC LINERS SHALL BE REPLACED WITH EACH CLEANING OF THE WASHOUT FACILITY.

**CONCRETE WASHOUT**

Date	Description	No.
Revisions		
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Project

**NOBLE TOWN CENTER - SOUTH PARKING IMPROVEMENTS**

ABINGTON TOWNSHIP

MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title

**SOIL EROSION AND SEDIMENT CONTROL DETAILS**

Project No. 220154401

Date 12 AUGUST 2025

Drawn By TFF/AEB

Checked By BMC

CE-501

Sheet 15 of 18



**APPENDIX A  
TIME OF CONCENTRATION  
WORKSHEETS**



**Time of Concentration (T<sub>c</sub>) or Travel Time (T<sub>t</sub>)  
Pre-Construction Watershed DA-1**

Project Noble Town Center - South Parking  
 Location Jenkintown, PA  
 Circle One: **Present** During Developed  
 Circle One: **T<sub>c</sub>** T<sub>t</sub> through subarea

NOTES: Space for as many as three segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to T<sub>c</sub> only)

1. Surface Description (Table 3-1).....
2. Manning's Roughness Coeff., n (Table 3-1).....
3. Flow Length, L (total L ≤ 150 ft).....
4. Two-yr 24-hr Rainfall, P<sub>2</sub>.....
5. Land Slope, s.....
6. T<sub>t</sub> = (0.007 (nL)<sup>0.8</sup>) / (P<sub>2</sub><sup>0.5</sup> s<sup>0.4</sup>) Compute T<sub>t</sub>.....

Segment ID	AB		
	Paved		
	0.011		
ft	150		
in	3.27		
ft/ft	0.011		
hr	0.035		

= 0.04

Shallow Concentrated Flow

7. Surface Description (Paved or Unpaved).....
8. Flow Length, L.....
9. Watercourse Slope, s.....
10. Average Velocity, V (Figure 3-1).....
11. T<sub>t</sub> = L / 3600V Compute T<sub>t</sub>.....

Segment ID	BC		
	Pavement		
ft	94		
ft/ft	0.011		
ft/sec	2.00		
hr	0.013		

= 0.01

Channel or Pipe Flow

12. Cross Sectional Flow Area, A.....
13. Wetted Perimeter, P<sub>w</sub>.....
14. Hydraulic Radius, R = A / P<sub>w</sub> Compute R.....
15. Channel Slope, s.....
16. Manning's Roughness Coeff., n.....
17. V = (1.486 R<sup>0.67</sup> s<sup>0.5</sup>) / n Compute V.....
18. Flow Length, L.....
19. T<sub>t</sub> = L / 3600V Compute T<sub>t</sub>.....
20. Watershed or Subarea T<sub>c</sub> or T<sub>t</sub> (add T<sub>t</sub> in steps 6, 11, and 19) .....

Segment ID			
ft <sup>2</sup>			
ft			
ft			
ft/ft			
ft/sec			
ft			
hr			

hr  
min

= 0.00  
0.05  
2.89

**Time of Concentration ( $T_c$ ) or Travel Time ( $T_t$ )  
Post-Construction Watershed DA-1**

Project Noble Town Center - South Parking  
 Location Jenkintown, PA  
 Circle One: Present During **Developed**  
 Circle One:  $T_c$   $T_t$  through subarea

NOTES: Space for as many as three segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to  $T_c$  only)

1. Surface Description (Table 3-1).....
2. Manning's Roughness Coeff., n (Table 3-1).....
3. Flow Length, L (total  $L \leq 150$  ft).....
4. Two-yr 24-hr Rainfall,  $P_2$ .....
5. Land Slope, s.....
6.  $T_t = (0.007 (nL)^{0.8}) / (P_2^{0.5} s^{0.4})$  Compute  $T_t$ .....

Segment ID	AB		
	Paved		
	0.011		
ft	150		
in	3.27		
ft/ft	0.018		
hr	0.029		

= 0.03

Shallow Concentrated Flow

7. Surface Description (Paved or Unpaved).....
8. Flow Length, L.....
9. Watercourse Slope, s.....
10. Average Velocity, V (Figure 3-1).....
11.  $T_t = L / 3600V$  Compute  $T_t$ .....

Segment ID	BC		
	Pavement		
ft	43		
ft/ft	0.018		
ft/sec	2.40		
hr	0.005		

= 0.00

Channel or Pipe Flow

12. Cross Sectional Flow Area, A.....
13. Wetted Perimeter,  $P_w$ .....
14. Hydraulic Radius,  $R = A / P_w$  Compute R.....
15. Channel Slope, s.....
16. Manning's Roughness Coeff., n.....
17.  $V = (1.486 R^{0.67} s^{0.5}) / n$  Compute V.....
18. Flow Length, L.....
19.  $T_t = L / 3600V$  Compute  $T_t$ .....
20. Watershed or Subarea  $T_c$  or  $T_t$  (add  $T_t$  in steps 6, 11, and 19) ..... hr

Segment ID	CD		
ft <sup>2</sup>	1.22		
ft	3.93		
ft	0.3107		
ft/ft	0.01		
	0.011		
ft/sec	6.173		
ft	106		
hr	0.005		

= 0.00  
0.04  
2.31

**Time of Concentration ( $T_c$ ) or Travel Time ( $T_t$ )  
Pre-Construction Watershed DA-2**

Project Noble Town Center - South Parking  
 Location Jenkintown, PA  
 Circle One: **Present** During Developed  
 Circle One:  $T_c$   $T_t$  through subarea

NOTES: Space for as many as three segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to  $T_c$  only)

1. Surface Description (Table 3-1).....
2. Manning's Roughness Coeff., n (Table 3-1).....
3. Flow Length, L (total  $L \leq 150$  ft).....
4. Two-yr 24-hr Rainfall,  $P_2$ .....
5. Land Slope, s.....
6.  $T_t = (0.007 (nL)^{0.8}) / (P_2^{0.5} s^{0.4})$  Compute  $T_t$ .....

Segment ID	AB		
	Paved		
	0.011		
ft	105		
in	3.27		
ft/ft	0.09		
hr	0.011		= <span style="border: 1px solid black; padding: 2px;">0.01</span>

Shallow Concentrated Flow

7. Surface Description (Paved or Unpaved).....
8. Flow Length, L.....
9. Watercourse Slope, s.....
10. Average Velocity, V (Figure 3-1).....
11.  $T_t = L / 3600V$  Compute  $T_t$ .....

Segment ID			
ft			
ft/ft			
ft/sec			
hr			= <span style="border: 1px solid black; padding: 2px;">0.00</span>

Channel or Pipe Flow

12. Cross Sectional Flow Area, A.....
13. Wetted Perimeter,  $P_w$ .....
14. Hydraulic Radius,  $R = A / P_w$  Compute R.....
15. Channel Slope, s.....
16. Manning's Roughness Coeff., n.....
17.  $V = (1.486 R^{0.67} s^{0.5}) / n$  Compute V.....
18. Flow Length, L.....
19.  $T_t = L / 3600V$  Compute  $T_t$ .....
20. Watershed or Subarea  $T_c$  or  $T_t$  (add  $T_t$  in steps 6, 11, and 19) ..... hr

Segment ID			
ft <sup>2</sup>			
ft			
ft			
ft/ft			
ft/sec			
ft			
hr			= <span style="border: 1px solid black; padding: 2px;">0.00</span>
			= <span style="border: 1px solid black; padding: 2px;">0.01</span>
			= <span style="border: 1px solid black; padding: 2px;">0.68</span>

**Time of Concentration ( $T_c$ ) or Travel Time ( $T_t$ )  
Post-Construction Watershed DA-2**

Project Noble Town Center - South Parking  
 Location Jenkintown, PA  
 Circle One: Present During **Developed**  
 Circle One:  $T_c$   $T_t$  through subarea

NOTES: Space for as many as three segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to  $T_c$  only)

1. Surface Description (Table 3-1).....
2. Manning's Roughness Coeff., n (Table 3-1).....
3. Flow Length, L (total  $L \leq 150$  ft).....
4. Two-yr 24-hr Rainfall,  $P_2$ .....
5. Land Slope, s.....
6.  $T_t = (0.007 (nL)^{0.8}) / (P_2^{0.5} s^{0.4})$  Compute  $T_t$ .....

Segment ID	AB		
	Paved		
	0.011		
ft	77		
in	3.27		
ft/ft	0.09		
hr	0.009		= <span style="border: 1px solid black; padding: 2px;">0.01</span>

Shallow Concentrated Flow

7. Surface Description (Paved or Unpaved).....
8. Flow Length, L.....
9. Watercourse Slope, s.....
10. Average Velocity, V (Figure 3-1).....
11.  $T_t = L / 3600V$  Compute  $T_t$ .....

Segment ID			
ft			
ft/ft			
ft/sec			
hr			= <span style="border: 1px solid black; padding: 2px;">0.00</span>

Channel or Pipe Flow

12. Cross Sectional Flow Area, A.....
13. Wetted Perimeter,  $P_w$ .....
14. Hydraulic Radius,  $R = A / P_w$  Compute R.....
15. Channel Slope, s.....
16. Manning's Roughness Coeff., n.....
17.  $V = (1.486 R^{0.67} s^{0.5}) / n$  Compute V.....
18. Flow Length, L.....
19.  $T_t = L / 3600V$  Compute  $T_t$ .....
20. Watershed or Subarea  $T_c$  or  $T_t$  (add  $T_t$  in steps 6, 11, and 19) ..... hr

Segment ID			
ft <sup>2</sup>			
ft			
ft			
ft/ft			
ft/sec			
ft			
hr			= <span style="border: 1px solid black; padding: 2px;">0.00</span>
			= <span style="border: 1px solid black; padding: 2px;">0.01</span>
			= <span style="border: 1px solid black; padding: 2px;">0.53</span>

**Time of Concentration ( $T_c$ ) or Travel Time ( $T_t$ )  
Pre and Post-Construction Watershed DA-3**

Project Noble Town Center - South Parking  
 Location Jenkintown, PA  
 Circle One: **Present** During Developed  
 Circle One:  $T_c$   $T_t$  through subarea

NOTES: Space for as many as three segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to  $T_c$  only)

1. Surface Description (Table 3-1).....
2. Manning's Roughness Coeff., n (Table 3-1).....
3. Flow Length, L (total  $L \leq 150$  ft).....
4. Two-yr 24-hr Rainfall,  $P_2$ .....
5. Land Slope, s.....
6.  $T_t = (0.007 (nL)^{0.8}) / (P_2^{0.5} s^{0.4})$  Compute  $T_t$ .....

Segment ID	AB		
	Asphalt		
	0.011		
ft	150		
in	3.27		
ft/ft	0.0494		
hr	0.019		

= 0.02

Shallow Concentrated Flow

7. Surface Description (Paved or Unpaved).....
8. Flow Length, L.....
9. Watercourse Slope, s.....
10. Average Velocity, V (Figure 3-1).....
11.  $T_t = L / 3600V$  Compute  $T_t$ .....

Segment ID	BC		
	Pavement		
ft	403		
ft/ft	0.038		
ft/sec	4.00		
hr	0.028		

= 0.03

Channel or Pipe Flow

12. Cross Sectional Flow Area, A.....
13. Wetted Perimeter,  $P_w$ .....
14. Hydraulic Radius,  $R = A / P_w$  Compute R.....
15. Channel Slope, s.....
16. Manning's Roughness Coeff., n.....
17.  $V = (1.486 R^{0.67} s^{0.5}) / n$  Compute V.....
18. Flow Length, L.....
19.  $T_t = L / 3600V$  Compute  $T_t$ .....
20. Watershed or Subarea  $T_c$  or  $T_t$  (add  $T_t$  in steps 6, 11, and 19) ..... hr

Segment ID			
ft <sup>2</sup>			
ft			
ft			
ft/ft			
ft/sec			
ft			
hr			

= 0.00  
0.05  
2.83

**Time of Concentration ( $T_c$ ) or Travel Time ( $T_t$ )  
Pre and Post-Construction Watershed DA-3**

Project Noble Town Center - South Parking  
 Location Jenkintown, PA  
 Circle One: *Present* During **Developed**  
 Circle One:  $T_c$   $T_t$  through subarea

NOTES: Space for as many as three segments per flow type can be used for each worksheet.  
 Include a map, schematic, or description of flow segments.

Sheet Flow (Applicable to  $T_c$  only)

1. Surface Description (Table 3-1).....
2. Manning's Roughness Coeff., n (Table 3-1).....
3. Flow Length, L (total  $L \leq 150$  ft).....
4. Two-yr 24-hr Rainfall,  $P_2$ .....
5. Land Slope, s.....
6.  $T_t = (0.007 (nL)^{0.8}) / (P_2^{0.5} s^{0.4})$  Compute  $T_t$ .....

Segment ID	AB		
	Asphalt		
	0.011		
ft	150		
in	3.27		
ft/ft	0.0494		
hr	0.019		

= 0.02

Shallow Concentrated Flow

7. Surface Description (Paved or Unpaved).....
8. Flow Length, L.....
9. Watercourse Slope, s.....
10. Average Velocity, V (Figure 3-1).....
11.  $T_t = L / 3600V$  Compute  $T_t$ .....

Segment ID	BC		
	Pavement		
ft	403		
ft/ft	0.038		
ft/sec	4.00		
hr	0.028		

= 0.03

Channel or Pipe Flow

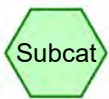
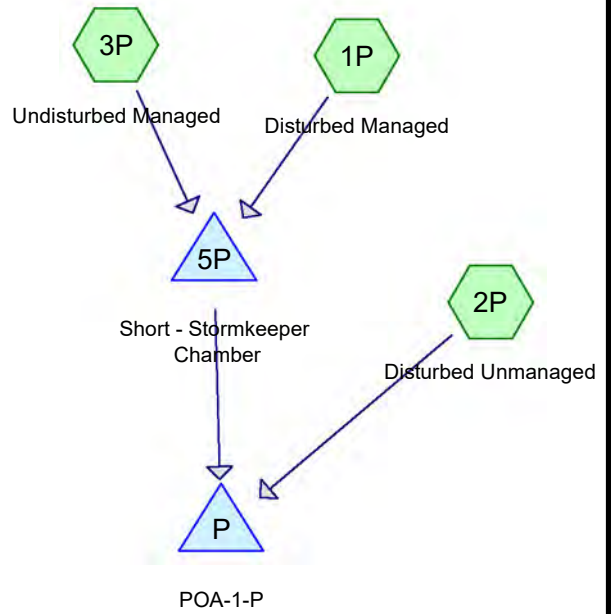
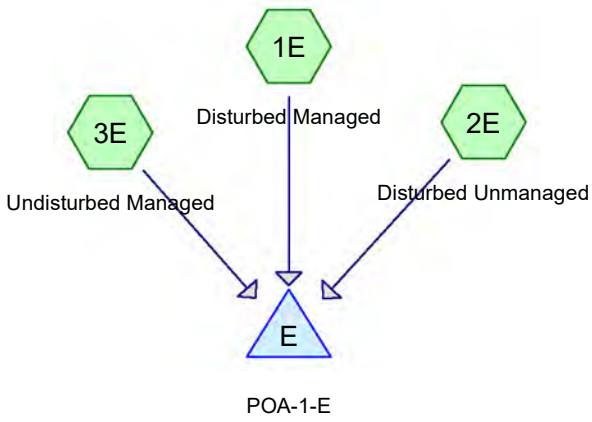
12. Cross Sectional Flow Area, A.....
13. Wetted Perimeter,  $P_w$ .....
14. Hydraulic Radius,  $R = A / P_w$  Compute R.....
15. Channel Slope, s.....
16. Manning's Roughness Coeff., n.....
17.  $V = (1.486 R^{0.67} s^{0.5}) / n$  Compute V.....
18. Flow Length, L.....
19.  $T_t = L / 3600V$  Compute  $T_t$ .....
20. Watershed or Subarea  $T_c$  or  $T_t$  (add  $T_t$  in steps 6, 11, and 19) ..... hr

Segment ID			
ft <sup>2</sup>			
ft			
ft			
ft/ft			
ft/sec			
ft			
hr			

= 0.00  
0.05  
2.83  
 min

**APPENDIX B  
STORMWATER MANAGEMENT  
CALCULATIONS**





**Routing Diagram for 2025.08.04 - Noble Town Center - New System**

Prepared by Langan Engineering, Printed 8/5/2025

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## 2025.08.04 - Noble Town Center - New System

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### Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	NOAA 24-hr	C	Default	24.00	1	2.74	2
2	2-Year	NOAA 24-hr	C	Default	24.00	1	3.30	2
3	5-Year	NOAA 24-hr	C	Default	24.00	1	4.17	2
4	10-Year	NOAA 24-hr	C	Default	24.00	1	4.90	2
5	25-Year	NOAA 24-hr	C	Default	24.00	1	5.97	2
6	50-Year	NOAA 24-hr	C	Default	24.00	1	6.88	2
7	100-Year	NOAA 24-hr	C	Default	24.00	1	7.87	2

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### Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
1,566	82	Grassed, Good Condition (2P)
76,191	98	Impervious (1E, 1P, 2E, 2P, 3E, 3P)
7,276	78	Meadow, Soil D (1E, 2E)
2,114	82	Open Space, Good, Soil D (3E, 3P)
6,351	82	Open Space, Unrated (1P)
<b>93,498</b>	<b>95</b>	<b>TOTAL AREA</b>

## 2025.08.04 - Noble Town Center - New System

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### Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
0	HSG C	
0	HSG D	
93,498	Other	1E, 1P, 2E, 2P, 3E, 3P
<b>93,498</b>		<b>TOTAL AREA</b>

**2025.08.04 - Noble Town Center - New System**

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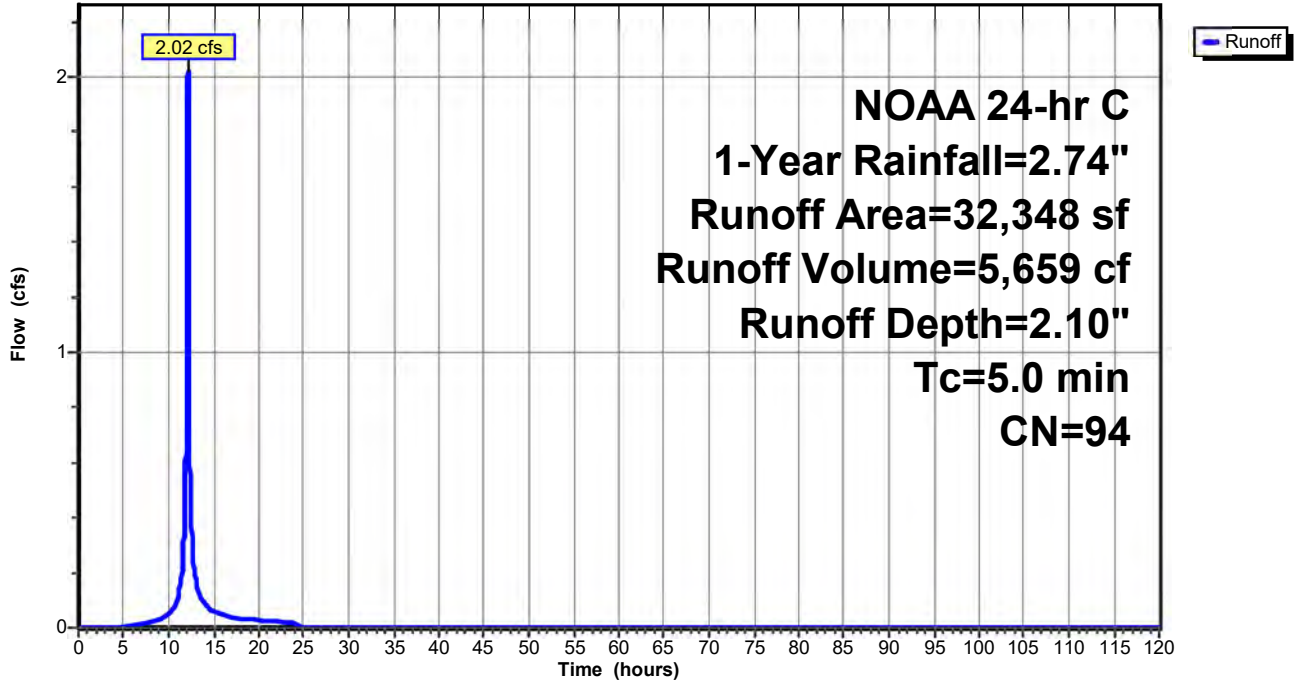
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**Ground Covers (selected nodes)**

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
0	0	0	0	1,566	1,566	Grassed, Good Condition
0	0	0	0	76,191	76,191	Impervious
0	0	0	0	7,276	7,276	Meadow, Soil D
0	0	0	0	2,114	2,114	Open Space, Good, Soil D
0	0	0	0	6,351	6,351	Open Space, Unrated
<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>93,498</b>	<b>93,498</b>	<b>TOTAL AREA</b>

**Subcatchment 1E: Disturbed Managed**

Hydrograph



**2025.08.04 - Noble Town Center - New System**

NOAA 24-hr C 1-Year Rainfall=2.74"

Prepared by Langan Engineering

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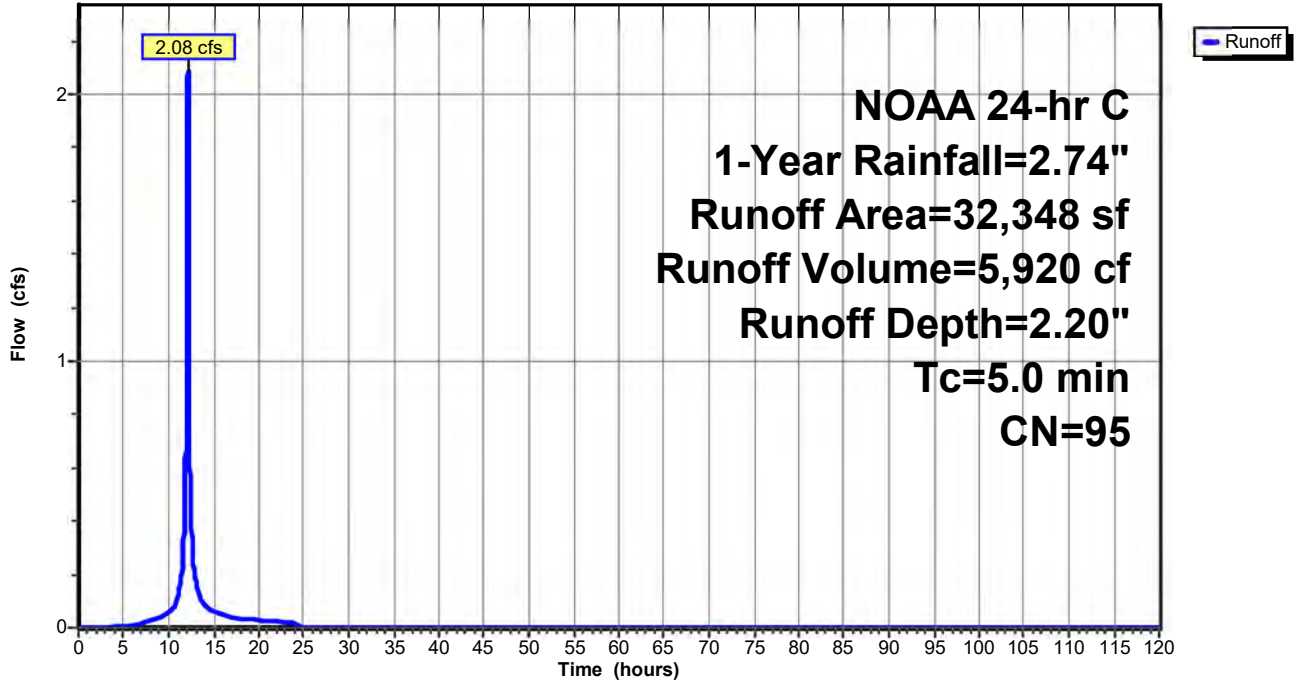
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**Hydrograph for Subcatchment 1E: Disturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	2.74	2.10	0.00
2.00	0.06	0.00	0.00	106.00	2.74	2.10	0.00
4.00	0.13	0.00	0.00	108.00	2.74	2.10	0.00
6.00	0.22	0.01	0.01	110.00	2.74	2.10	0.00
8.00	0.33	0.05	0.02	112.00	2.74	2.10	0.00
10.00	0.50	0.14	0.05	114.00	2.74	2.10	0.00
12.00	1.31	0.76	<b>1.12</b>	116.00	2.74	2.10	0.00
14.00	2.24	1.62	<b>0.09</b>	118.00	2.74	2.10	0.00
16.00	2.41	1.79	0.05	120.00	2.74	2.10	0.00
18.00	2.52	1.89	0.03				
20.00	2.61	1.97	0.03				
22.00	2.68	2.04	0.02				
24.00	<b>2.74</b>	<b>2.10</b>	0.02				
26.00	2.74	2.10	0.00				
28.00	2.74	2.10	0.00				
30.00	2.74	2.10	0.00				
32.00	2.74	2.10	0.00				
34.00	2.74	2.10	0.00				
36.00	2.74	2.10	0.00				
38.00	2.74	2.10	0.00				
40.00	2.74	2.10	0.00				
42.00	2.74	2.10	0.00				
44.00	2.74	2.10	0.00				
46.00	2.74	2.10	0.00				
48.00	2.74	2.10	0.00				
50.00	2.74	2.10	0.00				
52.00	2.74	2.10	0.00				
54.00	2.74	2.10	0.00				
56.00	2.74	2.10	0.00				
58.00	2.74	2.10	0.00				
60.00	2.74	2.10	0.00				
62.00	2.74	2.10	0.00				
64.00	2.74	2.10	0.00				
66.00	2.74	2.10	0.00				
68.00	2.74	2.10	0.00				
70.00	2.74	2.10	0.00				
72.00	2.74	2.10	0.00				
74.00	2.74	2.10	0.00				
76.00	2.74	2.10	0.00				
78.00	2.74	2.10	0.00				
80.00	2.74	2.10	0.00				
82.00	2.74	2.10	0.00				
84.00	2.74	2.10	0.00				
86.00	2.74	2.10	0.00				
88.00	2.74	2.10	0.00				
90.00	2.74	2.10	0.00				
92.00	2.74	2.10	0.00				
94.00	2.74	2.10	0.00				
96.00	2.74	2.10	0.00				
98.00	2.74	2.10	0.00				
100.00	2.74	2.10	0.00				
102.00	2.74	2.10	0.00				

Subcatchment 1P: Disturbed Managed

Hydrograph



**2025.08.04 - Noble Town Center - New System**

NOAA 24-hr C 1-Year Rainfall=2.74"

Prepared by Langan Engineering

Printed 8/5/2025

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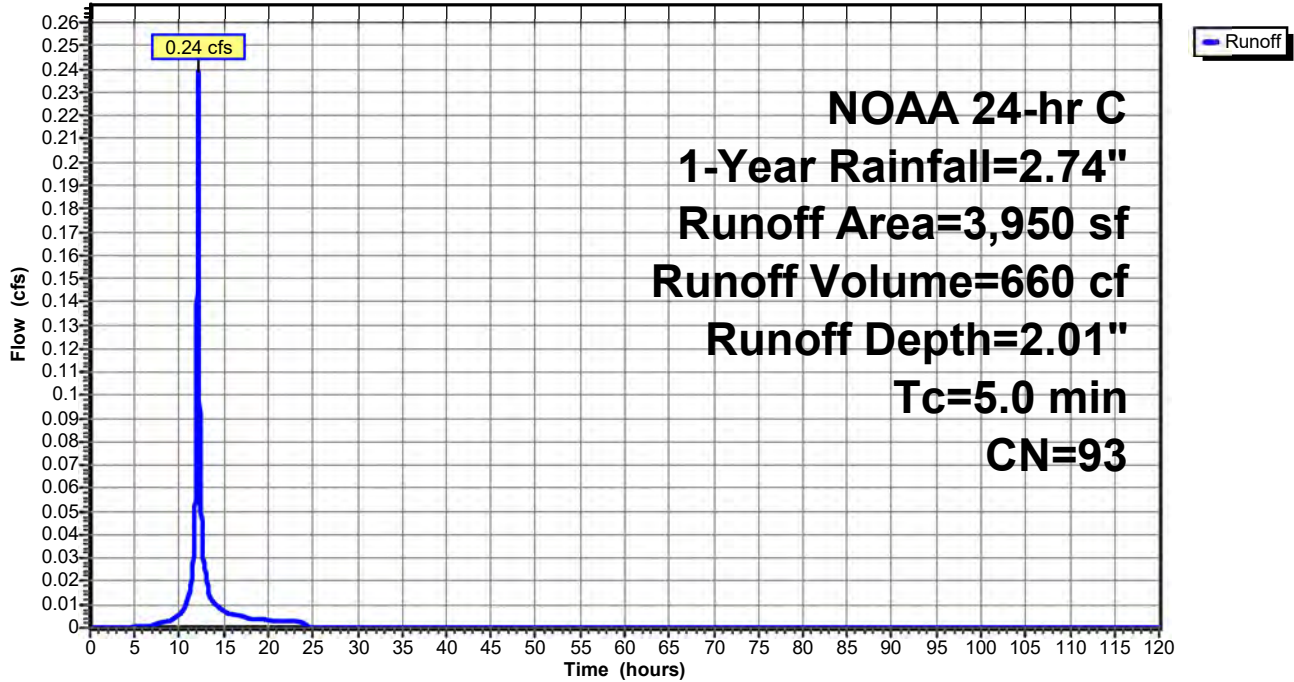
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**Hydrograph for Subcatchment 1P: Disturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	2.74	2.20	0.00
2.00	0.06	0.00	0.00	106.00	2.74	2.20	0.00
4.00	0.13	0.00	0.00	108.00	2.74	2.20	0.00
6.00	0.22	0.02	0.01	110.00	2.74	2.20	0.00
8.00	0.33	0.07	0.02	112.00	2.74	2.20	0.00
10.00	0.50	0.17	0.06	114.00	2.74	2.20	0.00
12.00	1.31	0.83	<b>1.16</b>	116.00	2.74	2.20	0.00
14.00	2.24	1.71	<b>0.09</b>	118.00	2.74	2.20	0.00
16.00	2.41	1.88	0.05	120.00	2.74	2.20	0.00
18.00	2.52	1.99	0.03				
20.00	2.61	2.07	0.03				
22.00	2.68	2.14	0.02				
24.00	<b>2.74</b>	<b>2.20</b>	0.02				
26.00	2.74	2.20	0.00				
28.00	2.74	2.20	0.00				
30.00	2.74	2.20	0.00				
32.00	2.74	2.20	0.00				
34.00	2.74	2.20	0.00				
36.00	2.74	2.20	0.00				
38.00	2.74	2.20	0.00				
40.00	2.74	2.20	0.00				
42.00	2.74	2.20	0.00				
44.00	2.74	2.20	0.00				
46.00	2.74	2.20	0.00				
48.00	2.74	2.20	0.00				
50.00	2.74	2.20	0.00				
52.00	2.74	2.20	0.00				
54.00	2.74	2.20	0.00				
56.00	2.74	2.20	0.00				
58.00	2.74	2.20	0.00				
60.00	2.74	2.20	0.00				
62.00	2.74	2.20	0.00				
64.00	2.74	2.20	0.00				
66.00	2.74	2.20	0.00				
68.00	2.74	2.20	0.00				
70.00	2.74	2.20	0.00				
72.00	2.74	2.20	0.00				
74.00	2.74	2.20	0.00				
76.00	2.74	2.20	0.00				
78.00	2.74	2.20	0.00				
80.00	2.74	2.20	0.00				
82.00	2.74	2.20	0.00				
84.00	2.74	2.20	0.00				
86.00	2.74	2.20	0.00				
88.00	2.74	2.20	0.00				
90.00	2.74	2.20	0.00				
92.00	2.74	2.20	0.00				
94.00	2.74	2.20	0.00				
96.00	2.74	2.20	0.00				
98.00	2.74	2.20	0.00				
100.00	2.74	2.20	0.00				
102.00	2.74	2.20	0.00				

Subcatchment 2E: Disturbed Unmanaged

Hydrograph

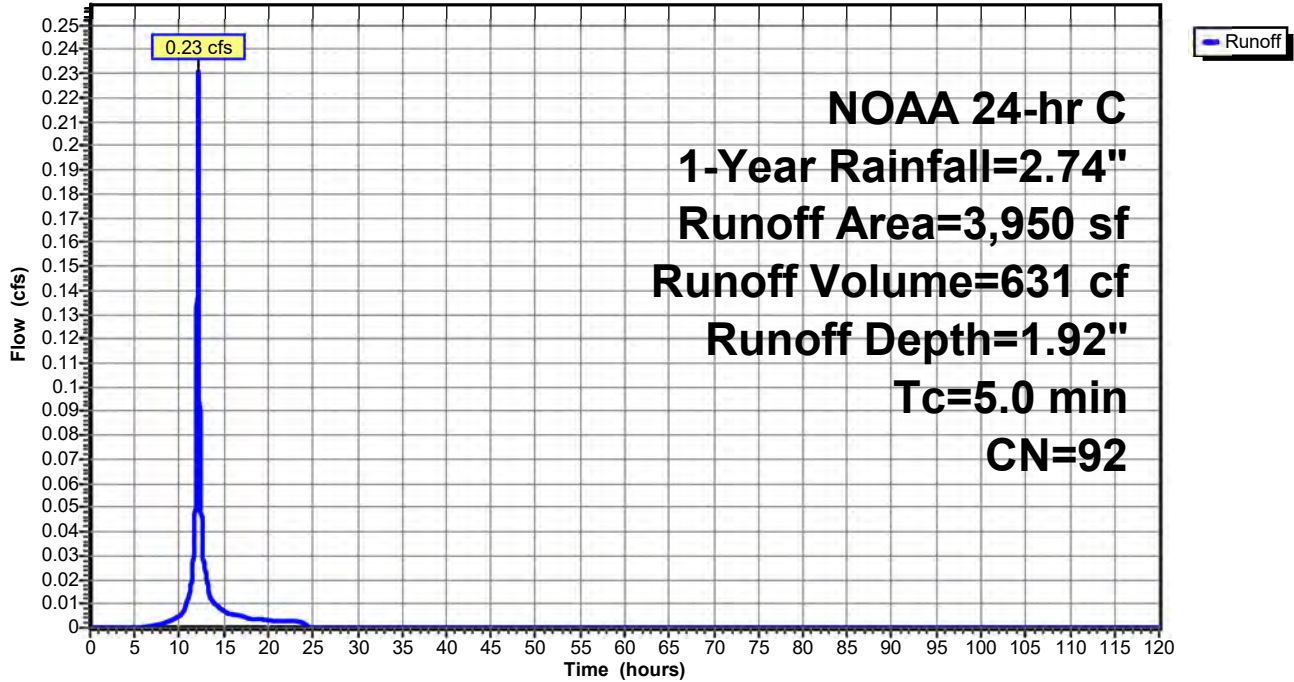


**Hydrograph for Subcatchment 2E: Disturbed Unmanaged**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	2.74	2.01	0.00
2.00	0.06	0.00	0.00	106.00	2.74	2.01	0.00
4.00	0.13	0.00	0.00	108.00	2.74	2.01	0.00
6.00	0.22	0.01	0.00	110.00	2.74	2.01	0.00
8.00	0.33	0.03	0.00	112.00	2.74	2.01	0.00
10.00	0.50	0.11	0.01	114.00	2.74	2.01	0.00
12.00	1.31	0.70	<b>0.13</b>	116.00	2.74	2.01	0.00
14.00	2.24	1.54	<b>0.01</b>	118.00	2.74	2.01	0.00
16.00	2.41	1.70	0.01	120.00	2.74	2.01	0.00
18.00	2.52	1.80	0.00				
20.00	2.61	1.88	0.00				
22.00	2.68	1.95	0.00				
24.00	<b>2.74</b>	<b>2.01</b>	0.00				
26.00	2.74	2.01	0.00				
28.00	2.74	2.01	0.00				
30.00	2.74	2.01	0.00				
32.00	2.74	2.01	0.00				
34.00	2.74	2.01	0.00				
36.00	2.74	2.01	0.00				
38.00	2.74	2.01	0.00				
40.00	2.74	2.01	0.00				
42.00	2.74	2.01	0.00				
44.00	2.74	2.01	0.00				
46.00	2.74	2.01	0.00				
48.00	2.74	2.01	0.00				
50.00	2.74	2.01	0.00				
52.00	2.74	2.01	0.00				
54.00	2.74	2.01	0.00				
56.00	2.74	2.01	0.00				
58.00	2.74	2.01	0.00				
60.00	2.74	2.01	0.00				
62.00	2.74	2.01	0.00				
64.00	2.74	2.01	0.00				
66.00	2.74	2.01	0.00				
68.00	2.74	2.01	0.00				
70.00	2.74	2.01	0.00				
72.00	2.74	2.01	0.00				
74.00	2.74	2.01	0.00				
76.00	2.74	2.01	0.00				
78.00	2.74	2.01	0.00				
80.00	2.74	2.01	0.00				
82.00	2.74	2.01	0.00				
84.00	2.74	2.01	0.00				
86.00	2.74	2.01	0.00				
88.00	2.74	2.01	0.00				
90.00	2.74	2.01	0.00				
92.00	2.74	2.01	0.00				
94.00	2.74	2.01	0.00				
96.00	2.74	2.01	0.00				
98.00	2.74	2.01	0.00				
100.00	2.74	2.01	0.00				
102.00	2.74	2.01	0.00				

Subcatchment 2P: Disturbed Unmanaged

Hydrograph

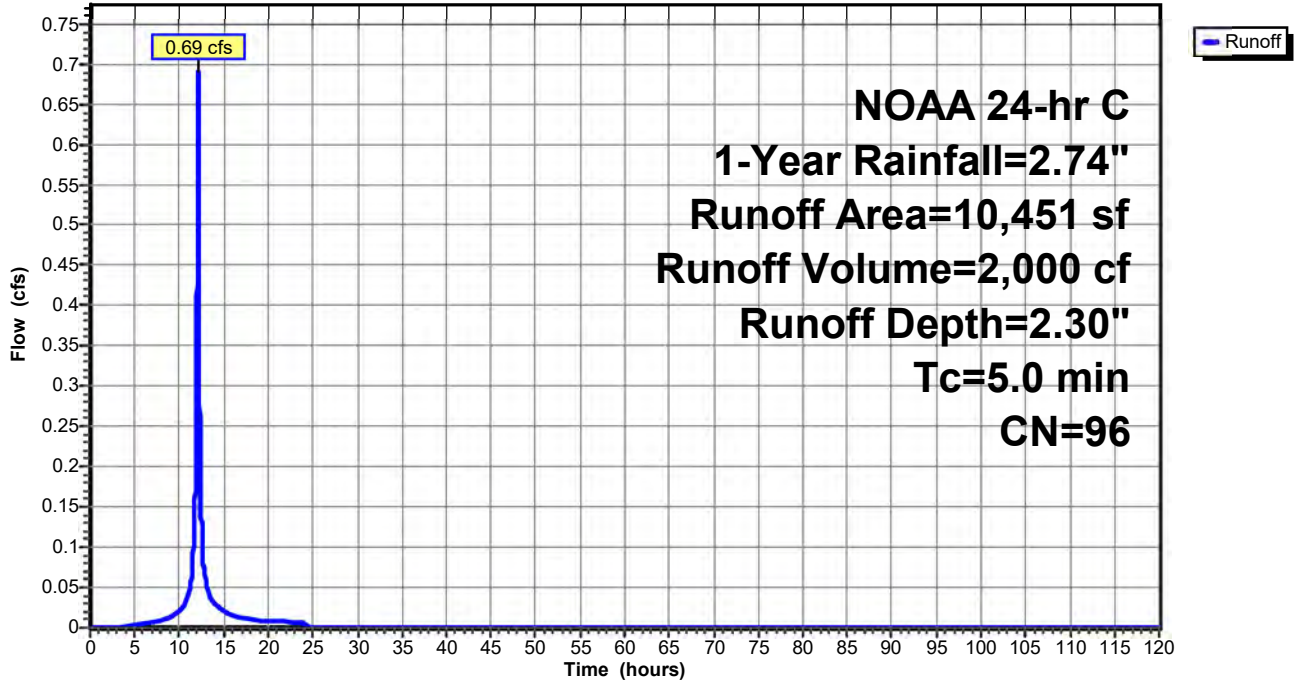


**Hydrograph for Subcatchment 2P: Disturbed Unmanaged**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	2.74	1.92	0.00
2.00	0.06	0.00	0.00	106.00	2.74	1.92	0.00
4.00	0.13	0.00	0.00	108.00	2.74	1.92	0.00
6.00	0.22	0.00	0.00	110.00	2.74	1.92	0.00
8.00	0.33	0.02	0.00	112.00	2.74	1.92	0.00
10.00	0.50	0.09	0.00	114.00	2.74	1.92	0.00
12.00	1.31	0.64	<b>0.12</b>	116.00	2.74	1.92	0.00
14.00	2.24	1.45	<b>0.01</b>	118.00	2.74	1.92	0.00
16.00	2.41	1.61	0.01	120.00	2.74	1.92	0.00
18.00	2.52	1.71	0.00				
20.00	2.61	1.79	0.00				
22.00	2.68	1.86	0.00				
24.00	<b>2.74</b>	<b>1.92</b>	0.00				
26.00	2.74	1.92	0.00				
28.00	2.74	1.92	0.00				
30.00	2.74	1.92	0.00				
32.00	2.74	1.92	0.00				
34.00	2.74	1.92	0.00				
36.00	2.74	1.92	0.00				
38.00	2.74	1.92	0.00				
40.00	2.74	1.92	0.00				
42.00	2.74	1.92	0.00				
44.00	2.74	1.92	0.00				
46.00	2.74	1.92	0.00				
48.00	2.74	1.92	0.00				
50.00	2.74	1.92	0.00				
52.00	2.74	1.92	0.00				
54.00	2.74	1.92	0.00				
56.00	2.74	1.92	0.00				
58.00	2.74	1.92	0.00				
60.00	2.74	1.92	0.00				
62.00	2.74	1.92	0.00				
64.00	2.74	1.92	0.00				
66.00	2.74	1.92	0.00				
68.00	2.74	1.92	0.00				
70.00	2.74	1.92	0.00				
72.00	2.74	1.92	0.00				
74.00	2.74	1.92	0.00				
76.00	2.74	1.92	0.00				
78.00	2.74	1.92	0.00				
80.00	2.74	1.92	0.00				
82.00	2.74	1.92	0.00				
84.00	2.74	1.92	0.00				
86.00	2.74	1.92	0.00				
88.00	2.74	1.92	0.00				
90.00	2.74	1.92	0.00				
92.00	2.74	1.92	0.00				
94.00	2.74	1.92	0.00				
96.00	2.74	1.92	0.00				
98.00	2.74	1.92	0.00				
100.00	2.74	1.92	0.00				
102.00	2.74	1.92	0.00				

Subcatchment 3E: Undisturbed Managed

Hydrograph

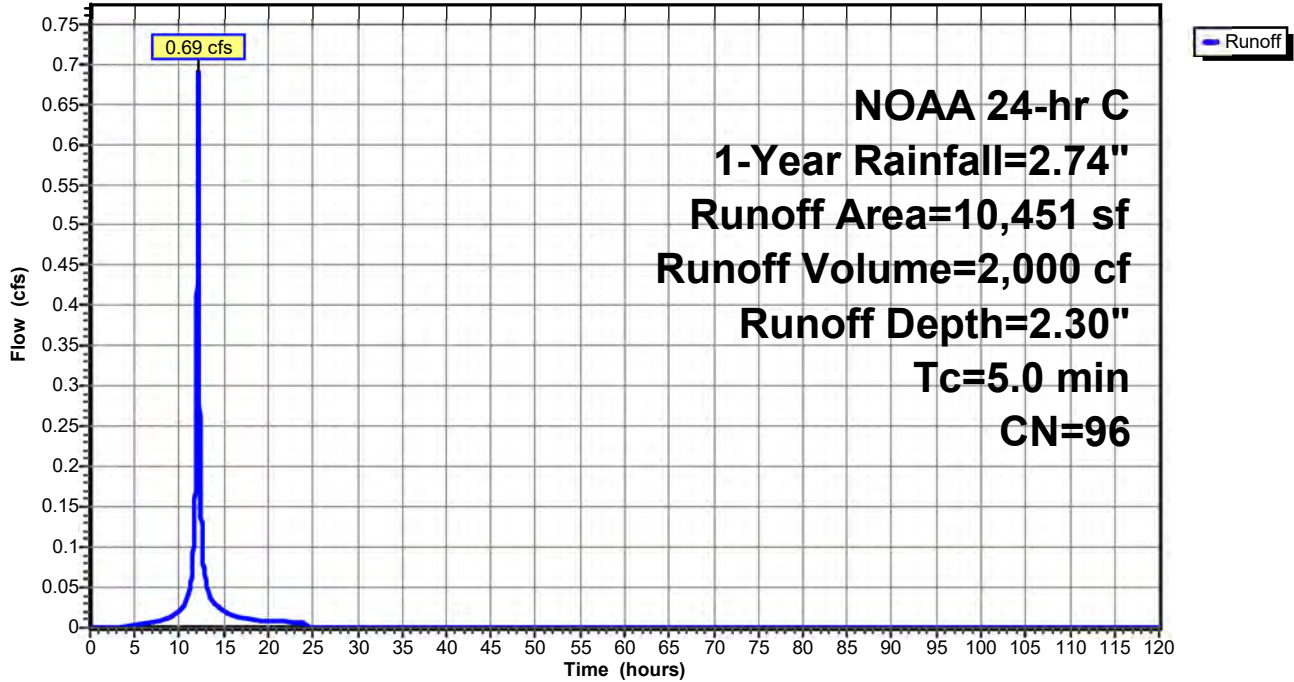


**Hydrograph for Subcatchment 3E: Undisturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	2.74	2.30	0.00
2.00	0.06	0.00	0.00	106.00	2.74	2.30	0.00
4.00	0.13	0.01	0.00	108.00	2.74	2.30	0.00
6.00	0.22	0.03	0.00	110.00	2.74	2.30	0.00
8.00	0.33	0.09	0.01	112.00	2.74	2.30	0.00
10.00	0.50	0.21	0.02	114.00	2.74	2.30	0.00
12.00	1.31	0.91	<b>0.39</b>	116.00	2.74	2.30	0.00
14.00	2.24	1.81	<b>0.03</b>	118.00	2.74	2.30	0.00
16.00	2.41	1.97	0.02	120.00	2.74	2.30	0.00
18.00	2.52	2.08	0.01				
20.00	2.61	2.16	0.01				
22.00	2.68	2.24	0.01				
24.00	<b>2.74</b>	<b>2.30</b>	0.01				
26.00	2.74	2.30	0.00				
28.00	2.74	2.30	0.00				
30.00	2.74	2.30	0.00				
32.00	2.74	2.30	0.00				
34.00	2.74	2.30	0.00				
36.00	2.74	2.30	0.00				
38.00	2.74	2.30	0.00				
40.00	2.74	2.30	0.00				
42.00	2.74	2.30	0.00				
44.00	2.74	2.30	0.00				
46.00	2.74	2.30	0.00				
48.00	2.74	2.30	0.00				
50.00	2.74	2.30	0.00				
52.00	2.74	2.30	0.00				
54.00	2.74	2.30	0.00				
56.00	2.74	2.30	0.00				
58.00	2.74	2.30	0.00				
60.00	2.74	2.30	0.00				
62.00	2.74	2.30	0.00				
64.00	2.74	2.30	0.00				
66.00	2.74	2.30	0.00				
68.00	2.74	2.30	0.00				
70.00	2.74	2.30	0.00				
72.00	2.74	2.30	0.00				
74.00	2.74	2.30	0.00				
76.00	2.74	2.30	0.00				
78.00	2.74	2.30	0.00				
80.00	2.74	2.30	0.00				
82.00	2.74	2.30	0.00				
84.00	2.74	2.30	0.00				
86.00	2.74	2.30	0.00				
88.00	2.74	2.30	0.00				
90.00	2.74	2.30	0.00				
92.00	2.74	2.30	0.00				
94.00	2.74	2.30	0.00				
96.00	2.74	2.30	0.00				
98.00	2.74	2.30	0.00				
100.00	2.74	2.30	0.00				
102.00	2.74	2.30	0.00				

Subcatchment 3P: Undisturbed Managed

Hydrograph

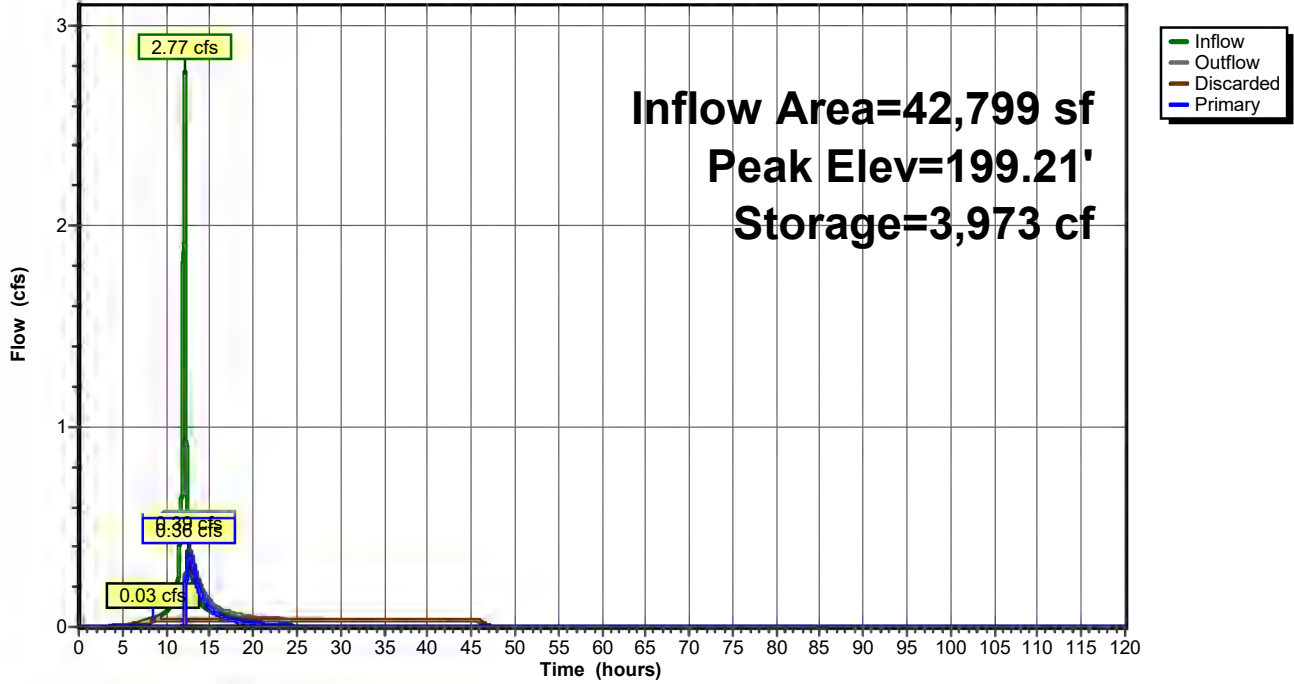


**Hydrograph for Subcatchment 3P: Undisturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	2.74	2.30	0.00
2.00	0.06	0.00	0.00	106.00	2.74	2.30	0.00
4.00	0.13	0.01	0.00	108.00	2.74	2.30	0.00
6.00	0.22	0.03	0.00	110.00	2.74	2.30	0.00
8.00	0.33	0.09	0.01	112.00	2.74	2.30	0.00
10.00	0.50	0.21	0.02	114.00	2.74	2.30	0.00
12.00	1.31	0.91	<b>0.39</b>	116.00	2.74	2.30	0.00
14.00	2.24	1.81	<b>0.03</b>	118.00	2.74	2.30	0.00
16.00	2.41	1.97	0.02	120.00	2.74	2.30	0.00
18.00	2.52	2.08	0.01				
20.00	2.61	2.16	0.01				
22.00	2.68	2.24	0.01				
24.00	<b>2.74</b>	<b>2.30</b>	0.01				
26.00	2.74	2.30	0.00				
28.00	2.74	2.30	0.00				
30.00	2.74	2.30	0.00				
32.00	2.74	2.30	0.00				
34.00	2.74	2.30	0.00				
36.00	2.74	2.30	0.00				
38.00	2.74	2.30	0.00				
40.00	2.74	2.30	0.00				
42.00	2.74	2.30	0.00				
44.00	2.74	2.30	0.00				
46.00	2.74	2.30	0.00				
48.00	2.74	2.30	0.00				
50.00	2.74	2.30	0.00				
52.00	2.74	2.30	0.00				
54.00	2.74	2.30	0.00				
56.00	2.74	2.30	0.00				
58.00	2.74	2.30	0.00				
60.00	2.74	2.30	0.00				
62.00	2.74	2.30	0.00				
64.00	2.74	2.30	0.00				
66.00	2.74	2.30	0.00				
68.00	2.74	2.30	0.00				
70.00	2.74	2.30	0.00				
72.00	2.74	2.30	0.00				
74.00	2.74	2.30	0.00				
76.00	2.74	2.30	0.00				
78.00	2.74	2.30	0.00				
80.00	2.74	2.30	0.00				
82.00	2.74	2.30	0.00				
84.00	2.74	2.30	0.00				
86.00	2.74	2.30	0.00				
88.00	2.74	2.30	0.00				
90.00	2.74	2.30	0.00				
92.00	2.74	2.30	0.00				
94.00	2.74	2.30	0.00				
96.00	2.74	2.30	0.00				
98.00	2.74	2.30	0.00				
100.00	2.74	2.30	0.00				
102.00	2.74	2.30	0.00				

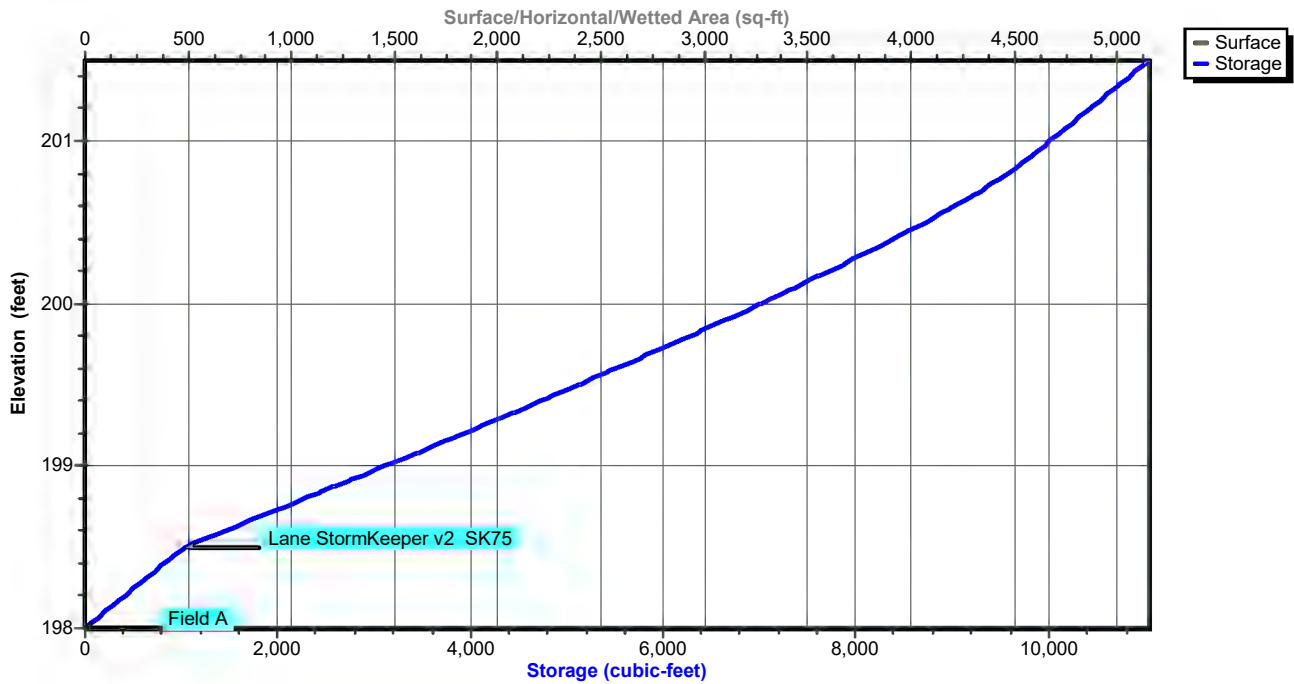
### Pond 5P: Short - Stormkeeper Chamber

Hydrograph



### Pond 5P: Short - Stormkeeper Chamber

Stage-Area-Storage



**2025.08.04 - Noble Town Center - New System**

NOAA 24-hr C 1-Year Rainfall=2.74"

Prepared by Langan Engineering

Printed 8/5/2025

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**Hydrograph for Pond 5P: Short - Stormkeeper Chamber**

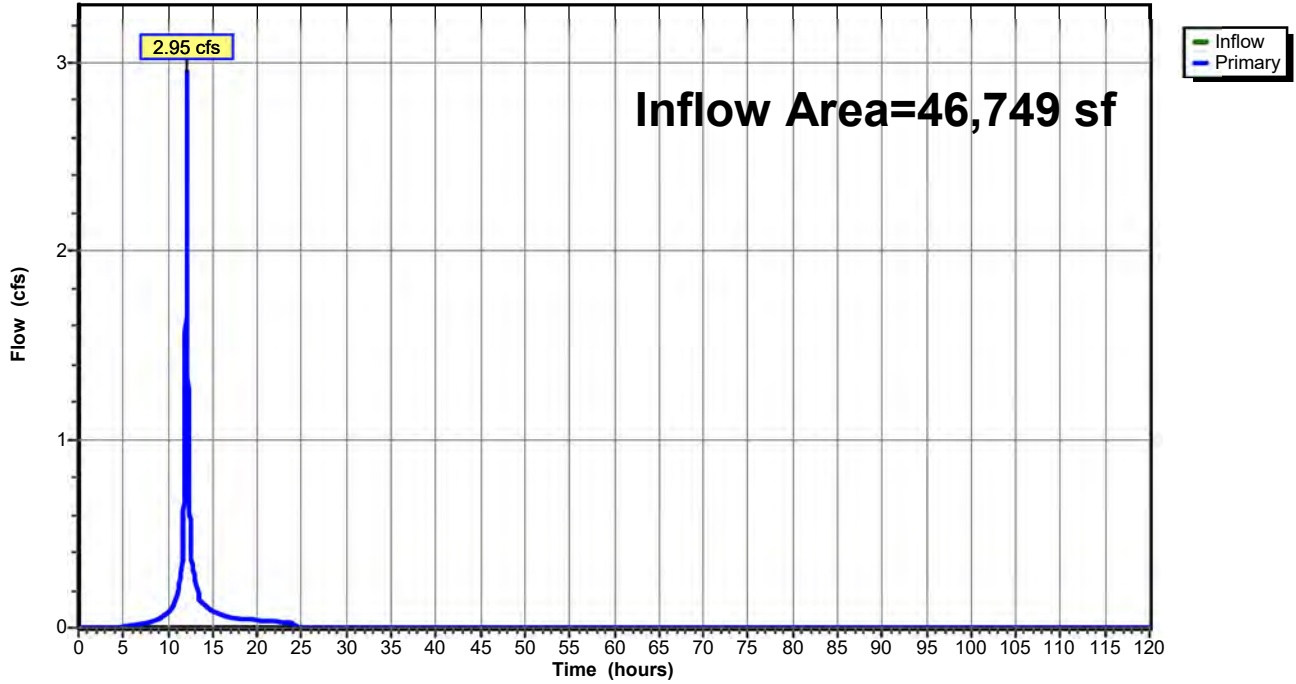
Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	198.00	0.00	0.00	0.00
5.00	0.01	14	198.01	0.01	<b>0.01</b>	0.00
10.00	<b>0.08</b>	<b>191</b>	<b>198.09</b>	<b>0.03</b>	<b>0.03</b>	<b>0.00</b>
15.00	<b>0.08</b>	<b>3,269</b>	<b>199.04</b>	<b>0.13</b>	0.03	<b>0.10</b>
20.00	0.04	2,848	198.94	0.05	0.03	0.02
25.00	0.00	2,587	198.87	0.03	0.03	0.00
30.00	0.00	1,986	198.73	0.03	0.03	0.00
35.00	0.00	1,385	198.58	0.03	0.03	0.00
40.00	0.00	784	198.38	0.03	0.03	0.00
45.00	0.00	182	198.09	0.03	0.03	0.00
50.00	0.00	0	198.00	0.00	0.00	0.00
55.00	0.00	0	198.00	0.00	0.00	0.00
60.00	0.00	0	198.00	0.00	0.00	0.00
65.00	0.00	0	198.00	0.00	0.00	0.00
70.00	0.00	0	198.00	0.00	0.00	0.00
75.00	0.00	0	198.00	0.00	0.00	0.00
80.00	0.00	0	198.00	0.00	0.00	0.00
85.00	0.00	0	198.00	0.00	0.00	0.00
90.00	0.00	0	198.00	0.00	0.00	0.00
95.00	0.00	0	198.00	0.00	0.00	0.00
100.00	0.00	0	198.00	0.00	0.00	0.00
105.00	0.00	0	198.00	0.00	0.00	0.00
110.00	0.00	0	198.00	0.00	0.00	0.00
115.00	0.00	0	198.00	0.00	0.00	0.00
120.00	0.00	0	198.00	0.00	0.00	0.00

**Stage-Area-Storage for Pond 5P: Short - Stormkeeper Chamber**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
198.00	5,154	0	200.60	5,154	9,027
198.05	5,154	103	200.65	5,154	9,173
198.10	5,154	206	200.70	5,154	9,312
198.15	5,154	309	200.75	5,154	9,444
198.20	5,154	412	200.80	5,154	9,569
198.25	5,154	515	200.85	5,154	9,688
198.30	5,154	618	200.90	5,154	9,802
198.35	5,154	722	200.95	5,154	9,910
198.40	5,154	825	201.00	5,154	10,015
198.45	5,154	928	201.05	5,154	10,118
198.50	5,154	1,031	201.10	5,154	10,221
198.55	5,154	1,242	201.15	5,154	10,324
198.60	5,154	1,452	201.20	5,154	10,427
198.65	5,154	1,662	201.25	5,154	10,530
198.70	5,154	1,872	201.30	5,154	10,633
198.75	5,154	2,080	201.35	5,154	10,736
198.80	5,154	2,289	201.40	5,154	10,839
198.85	5,154	2,496	201.45	5,154	10,943
198.90	5,154	2,703	201.50	5,154	11,046
198.95	5,154	2,909			
199.00	5,154	3,114			
199.05	5,154	3,319			
199.10	5,154	3,523			
199.15	5,154	3,726			
199.20	5,154	3,928			
199.25	5,154	4,129			
199.30	5,154	4,329			
199.35	5,154	4,528			
199.40	5,154	4,727			
199.45	5,154	4,924			
199.50	5,154	5,120			
199.55	5,154	5,315			
199.60	5,154	5,509			
199.65	5,154	5,702			
199.70	5,154	5,894			
199.75	5,154	6,084			
199.80	5,154	6,273			
199.85	5,154	6,460			
199.90	5,154	6,646			
199.95	5,154	6,830			
200.00	5,154	7,012			
200.05	5,154	7,193			
200.10	5,154	7,372			
200.15	5,154	7,549			
200.20	5,154	7,724			
200.25	5,154	7,896			
200.30	5,154	8,067			
200.35	5,154	8,235			
200.40	5,154	8,400			
200.45	5,154	8,562			
200.50	5,154	8,721			
200.55	5,154	8,876			

Pond E: POA-1-E

Hydrograph

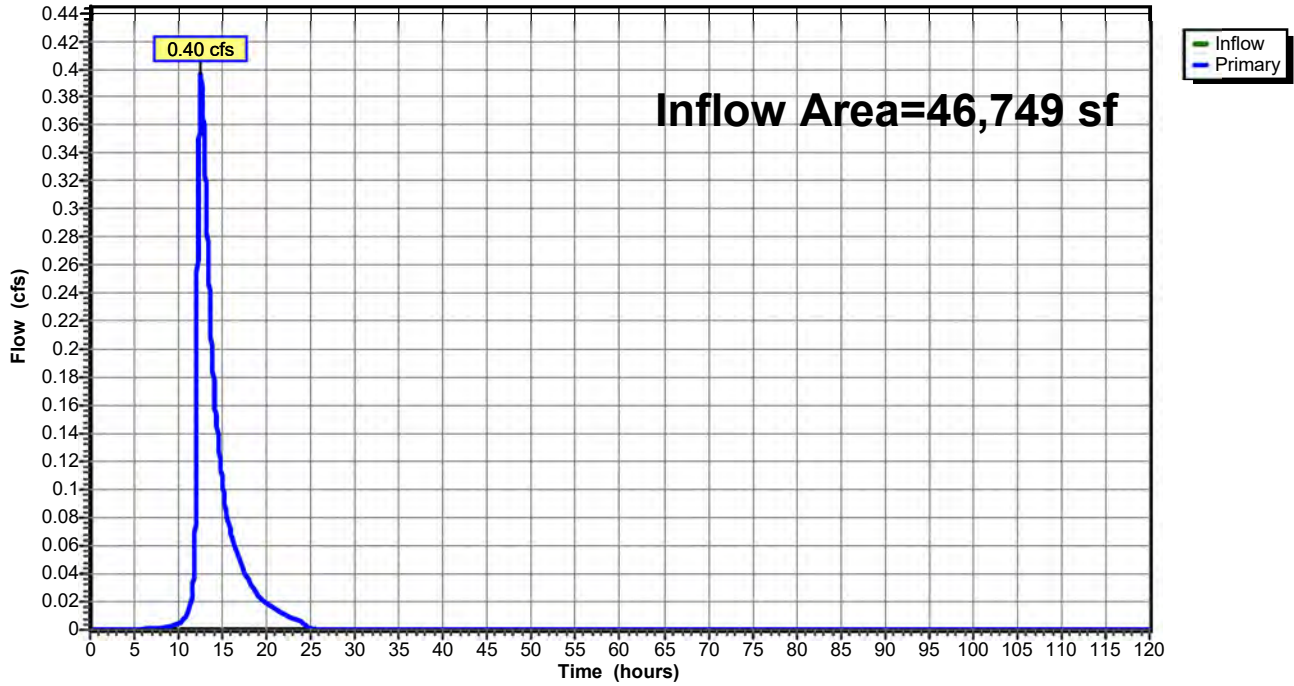


**Hydrograph for Pond E: POA-1-E**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	104.00	0.00		0.00
2.00	0.00		0.00	106.00	0.00		0.00
4.00	0.00		0.00	108.00	0.00		0.00
6.00	0.01		0.01	110.00	0.00		0.00
8.00	0.03		0.03	112.00	0.00		0.00
10.00	0.08		0.08	114.00	0.00		0.00
12.00	<b>1.64</b>		<b>1.64</b>	116.00	0.00		0.00
14.00	<b>0.13</b>		<b>0.13</b>	118.00	0.00		0.00
16.00	0.07		0.07	120.00	0.00		0.00
18.00	0.05		0.05				
20.00	0.04		0.04				
22.00	0.03		0.03				
24.00	0.04		0.04				
26.00	0.00		0.00				
28.00	0.00		0.00				
30.00	0.00		0.00				
32.00	0.00		0.00				
34.00	0.00		0.00				
36.00	0.00		0.00				
38.00	0.00		0.00				
40.00	0.00		0.00				
42.00	0.00		0.00				
44.00	0.00		0.00				
46.00	0.00		0.00				
48.00	0.00		0.00				
50.00	0.00		0.00				
52.00	0.00		0.00				
54.00	0.00		0.00				
56.00	0.00		0.00				
58.00	0.00		0.00				
60.00	0.00		0.00				
62.00	0.00		0.00				
64.00	0.00		0.00				
66.00	0.00		0.00				
68.00	0.00		0.00				
70.00	0.00		0.00				
72.00	0.00		0.00				
74.00	0.00		0.00				
76.00	0.00		0.00				
78.00	0.00		0.00				
80.00	0.00		0.00				
82.00	0.00		0.00				
84.00	0.00		0.00				
86.00	0.00		0.00				
88.00	0.00		0.00				
90.00	0.00		0.00				
92.00	0.00		0.00				
94.00	0.00		0.00				
96.00	0.00		0.00				
98.00	0.00		0.00				
100.00	0.00		0.00				
102.00	0.00		0.00				

Pond P: POA-1-P

Hydrograph

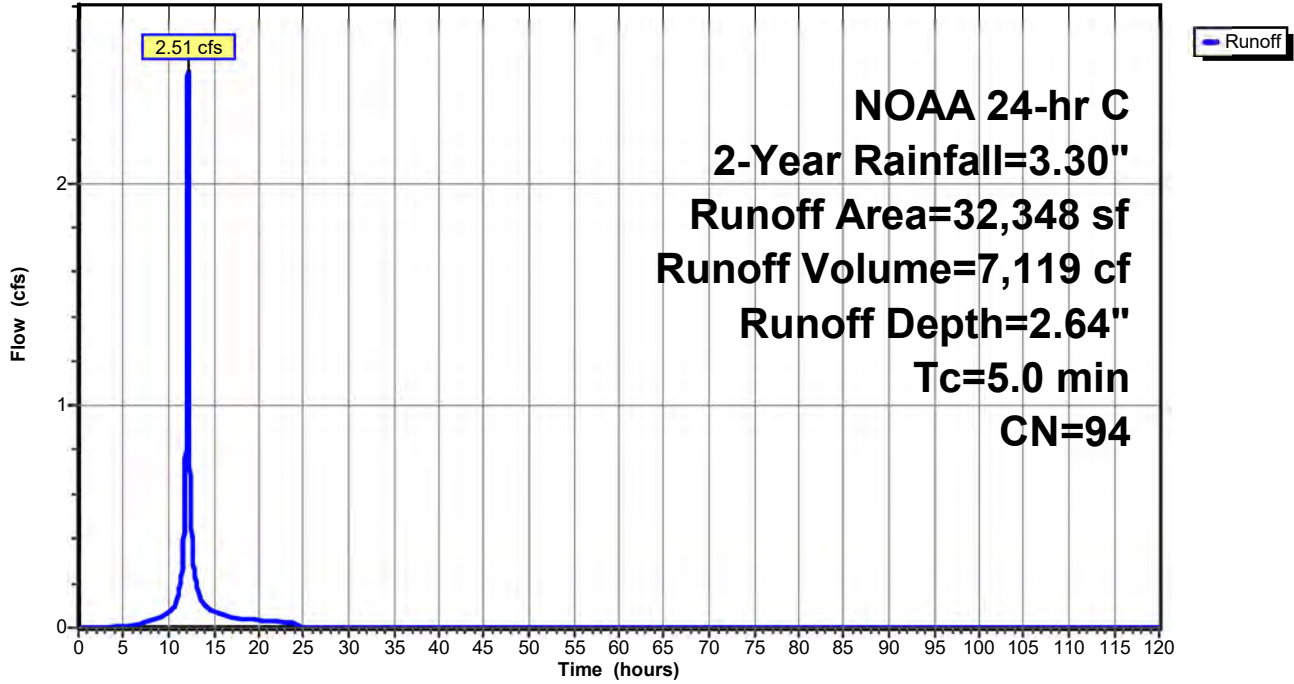


**Hydrograph for Pond P: POA-1-P**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	104.00	0.00		0.00
2.00	0.00		0.00	106.00	0.00		0.00
4.00	0.00		0.00	108.00	0.00		0.00
6.00	0.00		0.00	110.00	0.00		0.00
8.00	0.00		0.00	112.00	0.00		0.00
10.00	0.00		0.00	114.00	0.00		0.00
12.00	<b>0.12</b>		<b>0.12</b>	116.00	0.00		0.00
14.00	<b>0.17</b>		<b>0.17</b>	118.00	0.00		0.00
16.00	0.07		0.07	120.00	0.00		0.00
18.00	0.03		0.03				
20.00	0.02		0.02				
22.00	0.01		0.01				
24.00	0.01		0.01				
26.00	0.00		0.00				
28.00	0.00		0.00				
30.00	0.00		0.00				
32.00	0.00		0.00				
34.00	0.00		0.00				
36.00	0.00		0.00				
38.00	0.00		0.00				
40.00	0.00		0.00				
42.00	0.00		0.00				
44.00	0.00		0.00				
46.00	0.00		0.00				
48.00	0.00		0.00				
50.00	0.00		0.00				
52.00	0.00		0.00				
54.00	0.00		0.00				
56.00	0.00		0.00				
58.00	0.00		0.00				
60.00	0.00		0.00				
62.00	0.00		0.00				
64.00	0.00		0.00				
66.00	0.00		0.00				
68.00	0.00		0.00				
70.00	0.00		0.00				
72.00	0.00		0.00				
74.00	0.00		0.00				
76.00	0.00		0.00				
78.00	0.00		0.00				
80.00	0.00		0.00				
82.00	0.00		0.00				
84.00	0.00		0.00				
86.00	0.00		0.00				
88.00	0.00		0.00				
90.00	0.00		0.00				
92.00	0.00		0.00				
94.00	0.00		0.00				
96.00	0.00		0.00				
98.00	0.00		0.00				
100.00	0.00		0.00				
102.00	0.00		0.00				

Subcatchment 1E: Disturbed Managed

Hydrograph



**2025.08.04 - Noble Town Center - New System**

NOAA 24-hr C 2-Year Rainfall=3.30"

Prepared by Langan Engineering

Printed 8/5/2025

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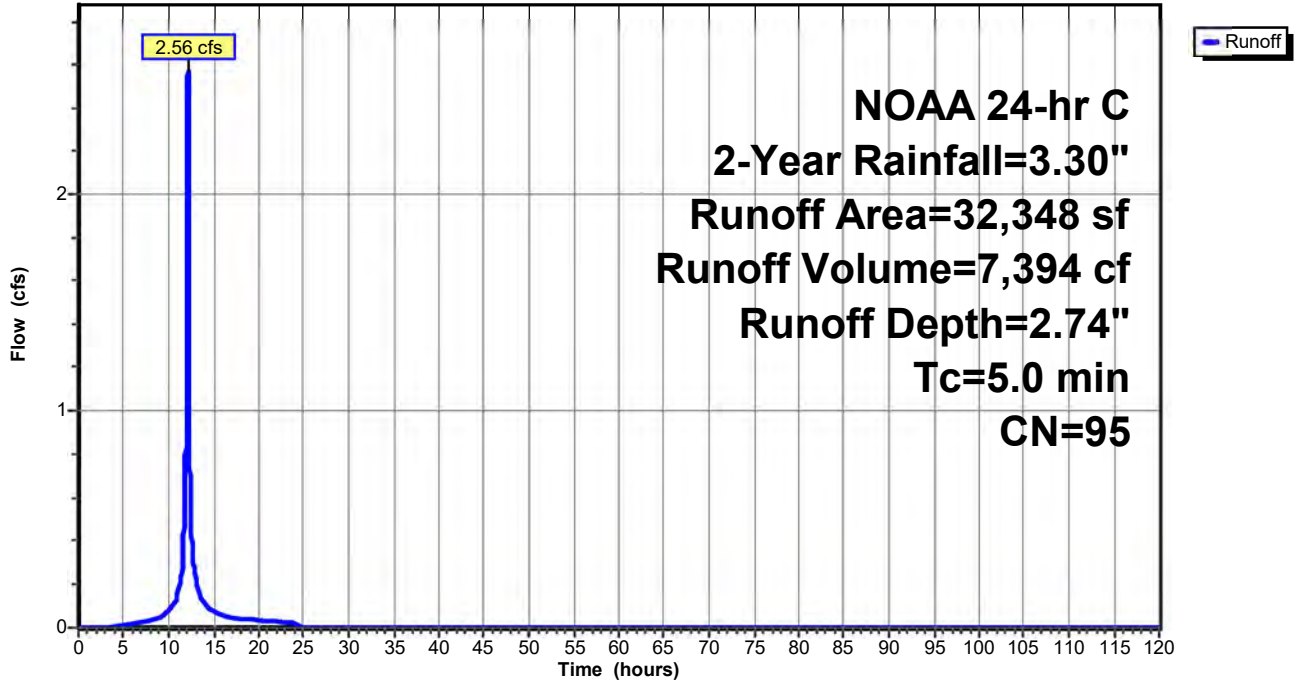
Page 26

**Hydrograph for Subcatchment 1E: Disturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	3.30	2.64	0.00
2.00	0.07	0.00	0.00	106.00	3.30	2.64	0.00
4.00	0.16	0.00	0.00	108.00	3.30	2.64	0.00
6.00	0.26	0.02	0.01	110.00	3.30	2.64	0.00
8.00	0.40	0.08	0.03	112.00	3.30	2.64	0.00
10.00	0.60	0.20	0.07	114.00	3.30	2.64	0.00
12.00	1.57	1.00	<b>1.40</b>	116.00	3.30	2.64	0.00
14.00	2.70	2.06	<b>0.11</b>	118.00	3.30	2.64	0.00
16.00	2.90	2.26	0.06	120.00	3.30	2.64	0.00
18.00	3.04	2.39	0.04				
20.00	3.14	2.48	0.03				
22.00	3.23	2.57	0.03				
24.00	<b>3.30</b>	<b>2.64</b>	0.03				
26.00	3.30	2.64	0.00				
28.00	3.30	2.64	0.00				
30.00	3.30	2.64	0.00				
32.00	3.30	2.64	0.00				
34.00	3.30	2.64	0.00				
36.00	3.30	2.64	0.00				
38.00	3.30	2.64	0.00				
40.00	3.30	2.64	0.00				
42.00	3.30	2.64	0.00				
44.00	3.30	2.64	0.00				
46.00	3.30	2.64	0.00				
48.00	3.30	2.64	0.00				
50.00	3.30	2.64	0.00				
52.00	3.30	2.64	0.00				
54.00	3.30	2.64	0.00				
56.00	3.30	2.64	0.00				
58.00	3.30	2.64	0.00				
60.00	3.30	2.64	0.00				
62.00	3.30	2.64	0.00				
64.00	3.30	2.64	0.00				
66.00	3.30	2.64	0.00				
68.00	3.30	2.64	0.00				
70.00	3.30	2.64	0.00				
72.00	3.30	2.64	0.00				
74.00	3.30	2.64	0.00				
76.00	3.30	2.64	0.00				
78.00	3.30	2.64	0.00				
80.00	3.30	2.64	0.00				
82.00	3.30	2.64	0.00				
84.00	3.30	2.64	0.00				
86.00	3.30	2.64	0.00				
88.00	3.30	2.64	0.00				
90.00	3.30	2.64	0.00				
92.00	3.30	2.64	0.00				
94.00	3.30	2.64	0.00				
96.00	3.30	2.64	0.00				
98.00	3.30	2.64	0.00				
100.00	3.30	2.64	0.00				
102.00	3.30	2.64	0.00				

Subcatchment 1P: Disturbed Managed

Hydrograph



**2025.08.04 - Noble Town Center - New System**

NOAA 24-hr C 2-Year Rainfall=3.30"

Prepared by Langan Engineering

Printed 8/5/2025

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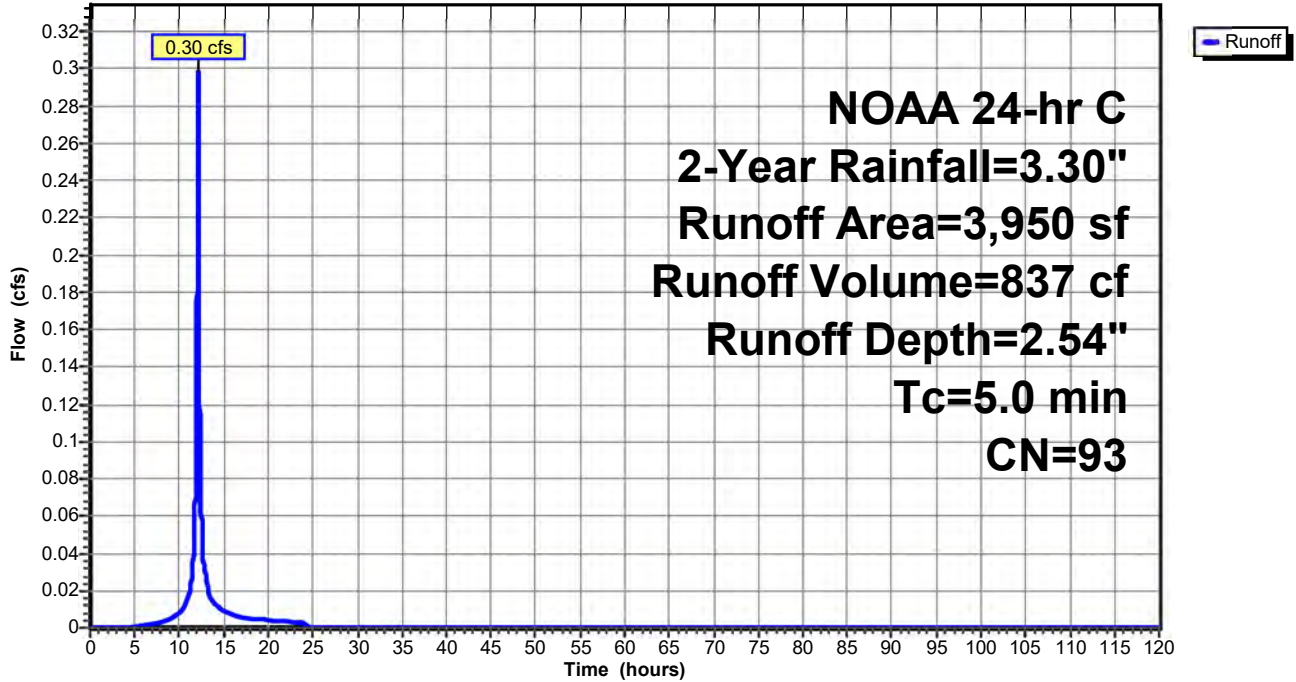
Page 28

**Hydrograph for Subcatchment 1P: Disturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	3.30	2.74	0.00
2.00	0.07	0.00	0.00	106.00	3.30	2.74	0.00
4.00	0.16	0.01	0.01	108.00	3.30	2.74	0.00
6.00	0.26	0.04	0.02	110.00	3.30	2.74	0.00
8.00	0.40	0.10	0.03	112.00	3.30	2.74	0.00
10.00	0.60	0.24	0.08	114.00	3.30	2.74	0.00
12.00	1.57	1.08	<b>1.44</b>	116.00	3.30	2.74	0.00
14.00	2.70	2.16	<b>0.11</b>	118.00	3.30	2.74	0.00
16.00	2.90	2.36	0.06	120.00	3.30	2.74	0.00
18.00	3.04	2.49	0.04				
20.00	3.14	2.58	0.03				
22.00	3.23	2.67	0.03				
24.00	<b>3.30</b>	<b>2.74</b>	0.03				
26.00	3.30	2.74	0.00				
28.00	3.30	2.74	0.00				
30.00	3.30	2.74	0.00				
32.00	3.30	2.74	0.00				
34.00	3.30	2.74	0.00				
36.00	3.30	2.74	0.00				
38.00	3.30	2.74	0.00				
40.00	3.30	2.74	0.00				
42.00	3.30	2.74	0.00				
44.00	3.30	2.74	0.00				
46.00	3.30	2.74	0.00				
48.00	3.30	2.74	0.00				
50.00	3.30	2.74	0.00				
52.00	3.30	2.74	0.00				
54.00	3.30	2.74	0.00				
56.00	3.30	2.74	0.00				
58.00	3.30	2.74	0.00				
60.00	3.30	2.74	0.00				
62.00	3.30	2.74	0.00				
64.00	3.30	2.74	0.00				
66.00	3.30	2.74	0.00				
68.00	3.30	2.74	0.00				
70.00	3.30	2.74	0.00				
72.00	3.30	2.74	0.00				
74.00	3.30	2.74	0.00				
76.00	3.30	2.74	0.00				
78.00	3.30	2.74	0.00				
80.00	3.30	2.74	0.00				
82.00	3.30	2.74	0.00				
84.00	3.30	2.74	0.00				
86.00	3.30	2.74	0.00				
88.00	3.30	2.74	0.00				
90.00	3.30	2.74	0.00				
92.00	3.30	2.74	0.00				
94.00	3.30	2.74	0.00				
96.00	3.30	2.74	0.00				
98.00	3.30	2.74	0.00				
100.00	3.30	2.74	0.00				
102.00	3.30	2.74	0.00				

Subcatchment 2E: Disturbed Unmanaged

Hydrograph

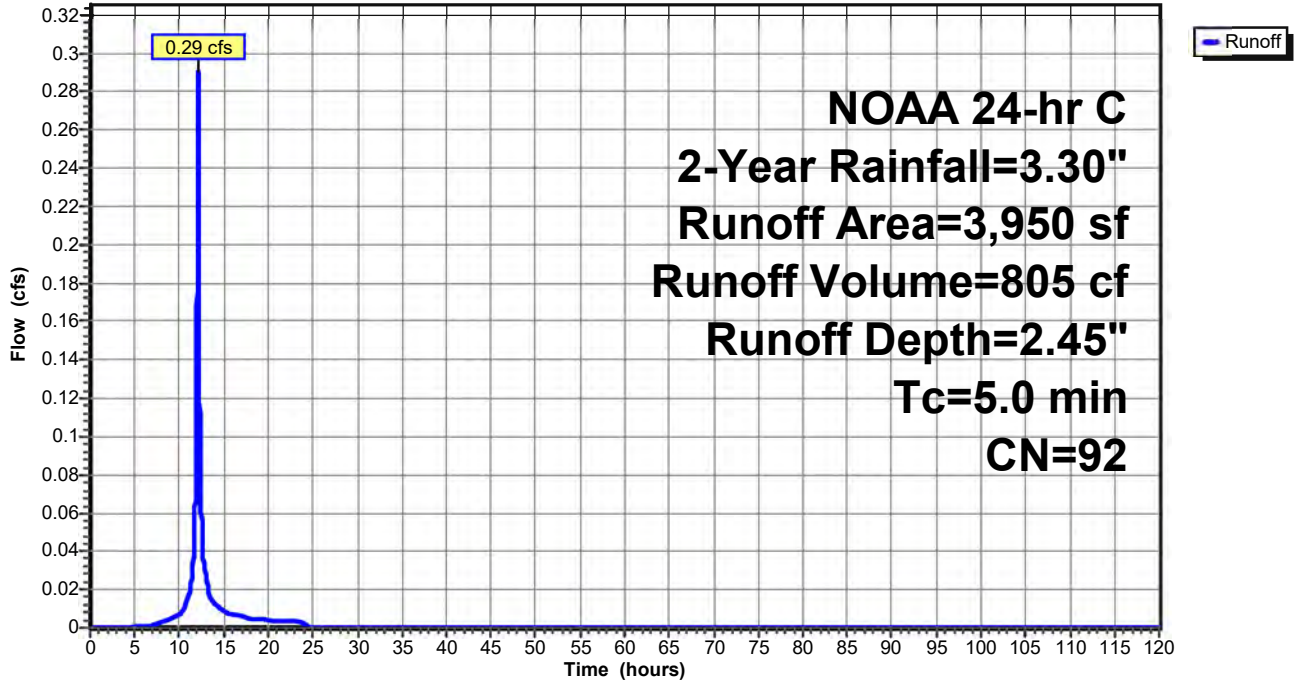


**Hydrograph for Subcatchment 2E: Disturbed Unmanaged**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	3.30	2.54	0.00
2.00	0.07	0.00	0.00	106.00	3.30	2.54	0.00
4.00	0.16	0.00	0.00	108.00	3.30	2.54	0.00
6.00	0.26	0.01	0.00	110.00	3.30	2.54	0.00
8.00	0.40	0.06	0.00	112.00	3.30	2.54	0.00
10.00	0.60	0.17	0.01	114.00	3.30	2.54	0.00
12.00	1.57	0.93	<b>0.16</b>	116.00	3.30	2.54	0.00
14.00	2.70	1.97	<b>0.01</b>	118.00	3.30	2.54	0.00
16.00	2.90	2.16	0.01	120.00	3.30	2.54	0.00
18.00	3.04	2.29	0.00				
20.00	3.14	2.39	0.00				
22.00	3.23	2.47	0.00				
24.00	<b>3.30</b>	<b>2.54</b>	0.00				
26.00	3.30	2.54	0.00				
28.00	3.30	2.54	0.00				
30.00	3.30	2.54	0.00				
32.00	3.30	2.54	0.00				
34.00	3.30	2.54	0.00				
36.00	3.30	2.54	0.00				
38.00	3.30	2.54	0.00				
40.00	3.30	2.54	0.00				
42.00	3.30	2.54	0.00				
44.00	3.30	2.54	0.00				
46.00	3.30	2.54	0.00				
48.00	3.30	2.54	0.00				
50.00	3.30	2.54	0.00				
52.00	3.30	2.54	0.00				
54.00	3.30	2.54	0.00				
56.00	3.30	2.54	0.00				
58.00	3.30	2.54	0.00				
60.00	3.30	2.54	0.00				
62.00	3.30	2.54	0.00				
64.00	3.30	2.54	0.00				
66.00	3.30	2.54	0.00				
68.00	3.30	2.54	0.00				
70.00	3.30	2.54	0.00				
72.00	3.30	2.54	0.00				
74.00	3.30	2.54	0.00				
76.00	3.30	2.54	0.00				
78.00	3.30	2.54	0.00				
80.00	3.30	2.54	0.00				
82.00	3.30	2.54	0.00				
84.00	3.30	2.54	0.00				
86.00	3.30	2.54	0.00				
88.00	3.30	2.54	0.00				
90.00	3.30	2.54	0.00				
92.00	3.30	2.54	0.00				
94.00	3.30	2.54	0.00				
96.00	3.30	2.54	0.00				
98.00	3.30	2.54	0.00				
100.00	3.30	2.54	0.00				
102.00	3.30	2.54	0.00				

Subcatchment 2P: Disturbed Unmanaged

Hydrograph



**2025.08.04 - Noble Town Center - New System**

NOAA 24-hr C 2-Year Rainfall=3.30"

Prepared by Langan Engineering

Printed 8/5/2025

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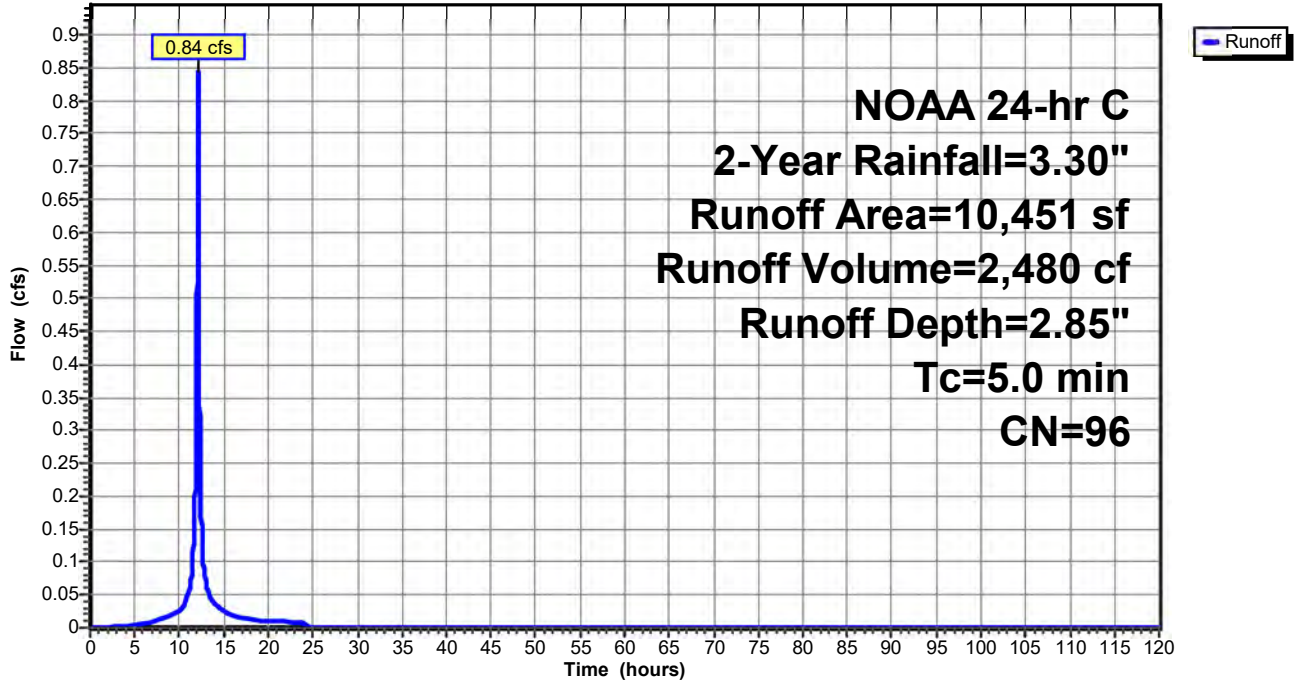
Page 32

**Hydrograph for Subcatchment 2P: Disturbed Unmanaged**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	3.30	2.45	0.00
2.00	0.07	0.00	0.00	106.00	3.30	2.45	0.00
4.00	0.16	0.00	0.00	108.00	3.30	2.45	0.00
6.00	0.26	0.01	0.00	110.00	3.30	2.45	0.00
8.00	0.40	0.04	0.00	112.00	3.30	2.45	0.00
10.00	0.60	0.14	0.01	114.00	3.30	2.45	0.00
12.00	1.57	0.86	<b>0.16</b>	116.00	3.30	2.45	0.00
14.00	2.70	1.88	<b>0.01</b>	118.00	3.30	2.45	0.00
16.00	2.90	2.07	0.01	120.00	3.30	2.45	0.00
18.00	3.04	2.20	0.00				
20.00	3.14	2.29	0.00				
22.00	3.23	2.37	0.00				
24.00	<b>3.30</b>	<b>2.45</b>	0.00				
26.00	3.30	2.45	0.00				
28.00	3.30	2.45	0.00				
30.00	3.30	2.45	0.00				
32.00	3.30	2.45	0.00				
34.00	3.30	2.45	0.00				
36.00	3.30	2.45	0.00				
38.00	3.30	2.45	0.00				
40.00	3.30	2.45	0.00				
42.00	3.30	2.45	0.00				
44.00	3.30	2.45	0.00				
46.00	3.30	2.45	0.00				
48.00	3.30	2.45	0.00				
50.00	3.30	2.45	0.00				
52.00	3.30	2.45	0.00				
54.00	3.30	2.45	0.00				
56.00	3.30	2.45	0.00				
58.00	3.30	2.45	0.00				
60.00	3.30	2.45	0.00				
62.00	3.30	2.45	0.00				
64.00	3.30	2.45	0.00				
66.00	3.30	2.45	0.00				
68.00	3.30	2.45	0.00				
70.00	3.30	2.45	0.00				
72.00	3.30	2.45	0.00				
74.00	3.30	2.45	0.00				
76.00	3.30	2.45	0.00				
78.00	3.30	2.45	0.00				
80.00	3.30	2.45	0.00				
82.00	3.30	2.45	0.00				
84.00	3.30	2.45	0.00				
86.00	3.30	2.45	0.00				
88.00	3.30	2.45	0.00				
90.00	3.30	2.45	0.00				
92.00	3.30	2.45	0.00				
94.00	3.30	2.45	0.00				
96.00	3.30	2.45	0.00				
98.00	3.30	2.45	0.00				
100.00	3.30	2.45	0.00				
102.00	3.30	2.45	0.00				

Subcatchment 3E: Undisturbed Managed

Hydrograph

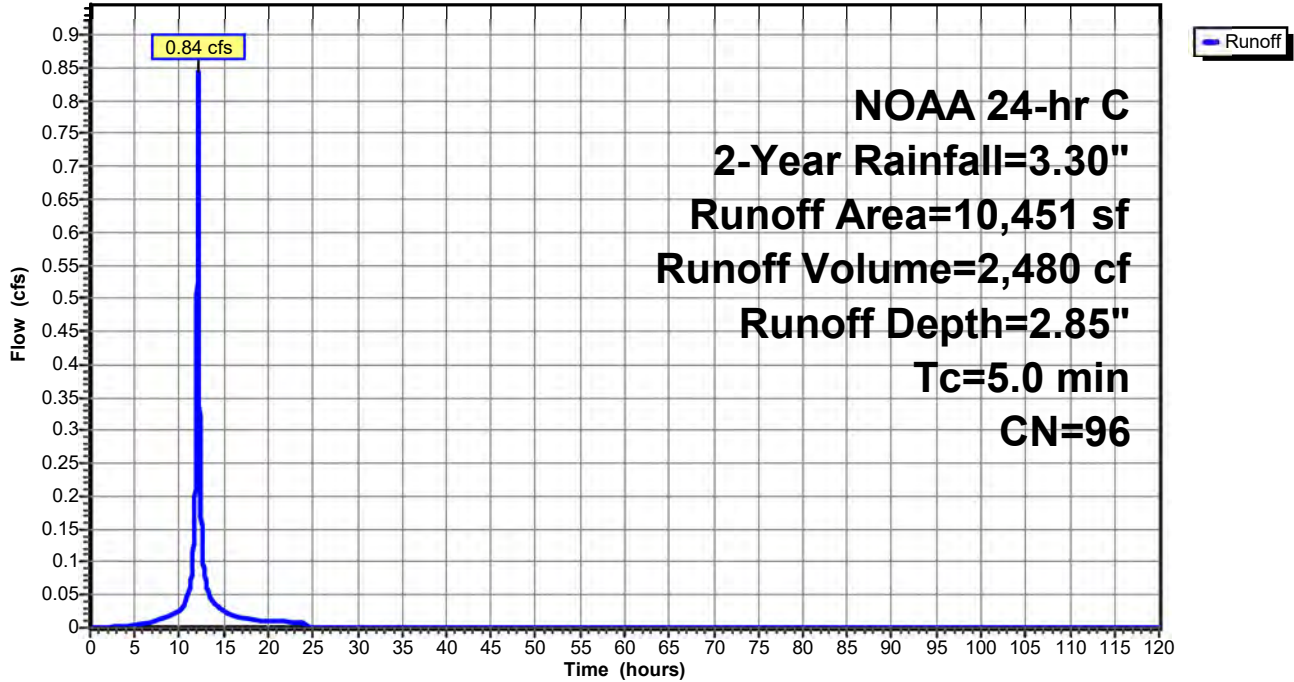


**Hydrograph for Subcatchment 3E: Undisturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	3.30	2.85	0.00
2.00	0.07	0.00	0.00	106.00	3.30	2.85	0.00
4.00	0.16	0.01	0.00	108.00	3.30	2.85	0.00
6.00	0.26	0.05	0.01	110.00	3.30	2.85	0.00
8.00	0.40	0.13	0.01	112.00	3.30	2.85	0.00
10.00	0.60	0.29	0.03	114.00	3.30	2.85	0.00
12.00	1.57	1.16	<b>0.48</b>	116.00	3.30	2.85	0.00
14.00	2.70	2.26	<b>0.04</b>	118.00	3.30	2.85	0.00
16.00	2.90	2.46	0.02	120.00	3.30	2.85	0.00
18.00	3.04	2.59	0.01				
20.00	3.14	2.69	0.01				
22.00	3.23	2.77	0.01				
24.00	<b>3.30</b>	<b>2.85</b>	0.01				
26.00	3.30	2.85	0.00				
28.00	3.30	2.85	0.00				
30.00	3.30	2.85	0.00				
32.00	3.30	2.85	0.00				
34.00	3.30	2.85	0.00				
36.00	3.30	2.85	0.00				
38.00	3.30	2.85	0.00				
40.00	3.30	2.85	0.00				
42.00	3.30	2.85	0.00				
44.00	3.30	2.85	0.00				
46.00	3.30	2.85	0.00				
48.00	3.30	2.85	0.00				
50.00	3.30	2.85	0.00				
52.00	3.30	2.85	0.00				
54.00	3.30	2.85	0.00				
56.00	3.30	2.85	0.00				
58.00	3.30	2.85	0.00				
60.00	3.30	2.85	0.00				
62.00	3.30	2.85	0.00				
64.00	3.30	2.85	0.00				
66.00	3.30	2.85	0.00				
68.00	3.30	2.85	0.00				
70.00	3.30	2.85	0.00				
72.00	3.30	2.85	0.00				
74.00	3.30	2.85	0.00				
76.00	3.30	2.85	0.00				
78.00	3.30	2.85	0.00				
80.00	3.30	2.85	0.00				
82.00	3.30	2.85	0.00				
84.00	3.30	2.85	0.00				
86.00	3.30	2.85	0.00				
88.00	3.30	2.85	0.00				
90.00	3.30	2.85	0.00				
92.00	3.30	2.85	0.00				
94.00	3.30	2.85	0.00				
96.00	3.30	2.85	0.00				
98.00	3.30	2.85	0.00				
100.00	3.30	2.85	0.00				
102.00	3.30	2.85	0.00				

Subcatchment 3P: Undisturbed Managed

Hydrograph



**2025.08.04 - Noble Town Center - New System**

NOAA 24-hr C 2-Year Rainfall=3.30"

Prepared by Langan Engineering

Printed 8/5/2025

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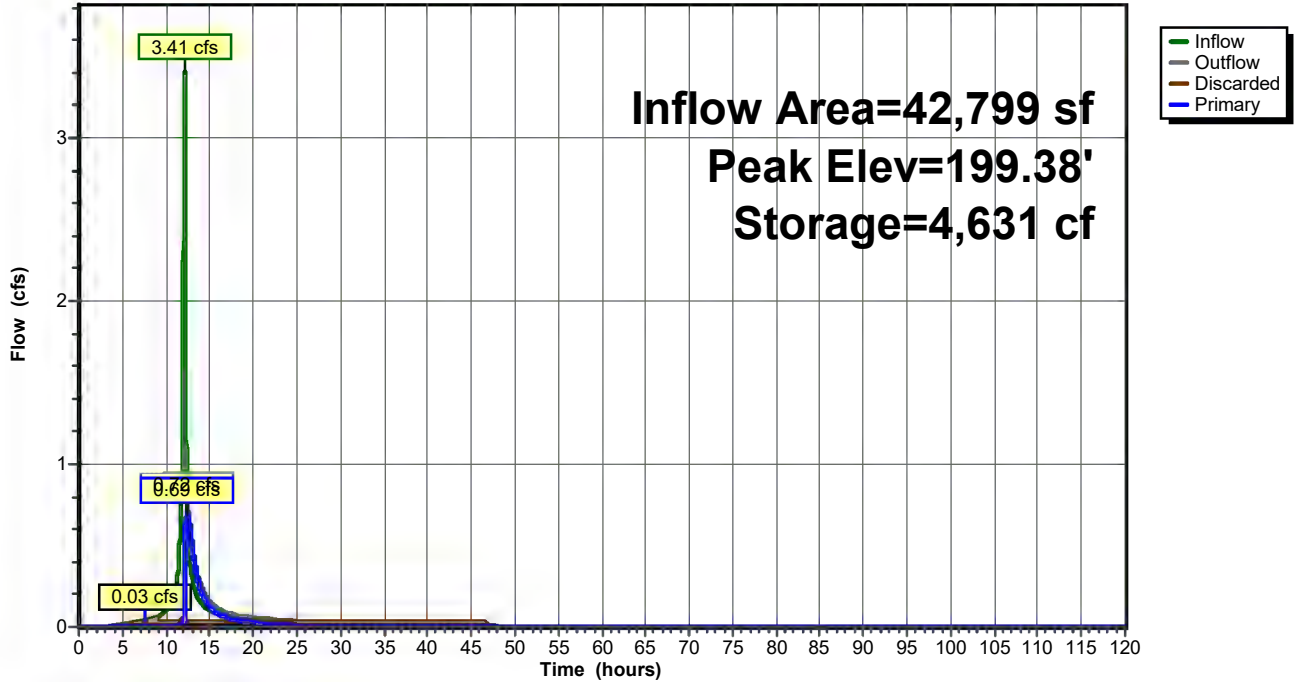
Page 36

**Hydrograph for Subcatchment 3P: Undisturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	3.30	2.85	0.00
2.00	0.07	0.00	0.00	106.00	3.30	2.85	0.00
4.00	0.16	0.01	0.00	108.00	3.30	2.85	0.00
6.00	0.26	0.05	0.01	110.00	3.30	2.85	0.00
8.00	0.40	0.13	0.01	112.00	3.30	2.85	0.00
10.00	0.60	0.29	0.03	114.00	3.30	2.85	0.00
12.00	1.57	1.16	<b>0.48</b>	116.00	3.30	2.85	0.00
14.00	2.70	2.26	<b>0.04</b>	118.00	3.30	2.85	0.00
16.00	2.90	2.46	0.02	120.00	3.30	2.85	0.00
18.00	3.04	2.59	0.01				
20.00	3.14	2.69	0.01				
22.00	3.23	2.77	0.01				
24.00	<b>3.30</b>	<b>2.85</b>	0.01				
26.00	3.30	2.85	0.00				
28.00	3.30	2.85	0.00				
30.00	3.30	2.85	0.00				
32.00	3.30	2.85	0.00				
34.00	3.30	2.85	0.00				
36.00	3.30	2.85	0.00				
38.00	3.30	2.85	0.00				
40.00	3.30	2.85	0.00				
42.00	3.30	2.85	0.00				
44.00	3.30	2.85	0.00				
46.00	3.30	2.85	0.00				
48.00	3.30	2.85	0.00				
50.00	3.30	2.85	0.00				
52.00	3.30	2.85	0.00				
54.00	3.30	2.85	0.00				
56.00	3.30	2.85	0.00				
58.00	3.30	2.85	0.00				
60.00	3.30	2.85	0.00				
62.00	3.30	2.85	0.00				
64.00	3.30	2.85	0.00				
66.00	3.30	2.85	0.00				
68.00	3.30	2.85	0.00				
70.00	3.30	2.85	0.00				
72.00	3.30	2.85	0.00				
74.00	3.30	2.85	0.00				
76.00	3.30	2.85	0.00				
78.00	3.30	2.85	0.00				
80.00	3.30	2.85	0.00				
82.00	3.30	2.85	0.00				
84.00	3.30	2.85	0.00				
86.00	3.30	2.85	0.00				
88.00	3.30	2.85	0.00				
90.00	3.30	2.85	0.00				
92.00	3.30	2.85	0.00				
94.00	3.30	2.85	0.00				
96.00	3.30	2.85	0.00				
98.00	3.30	2.85	0.00				
100.00	3.30	2.85	0.00				
102.00	3.30	2.85	0.00				

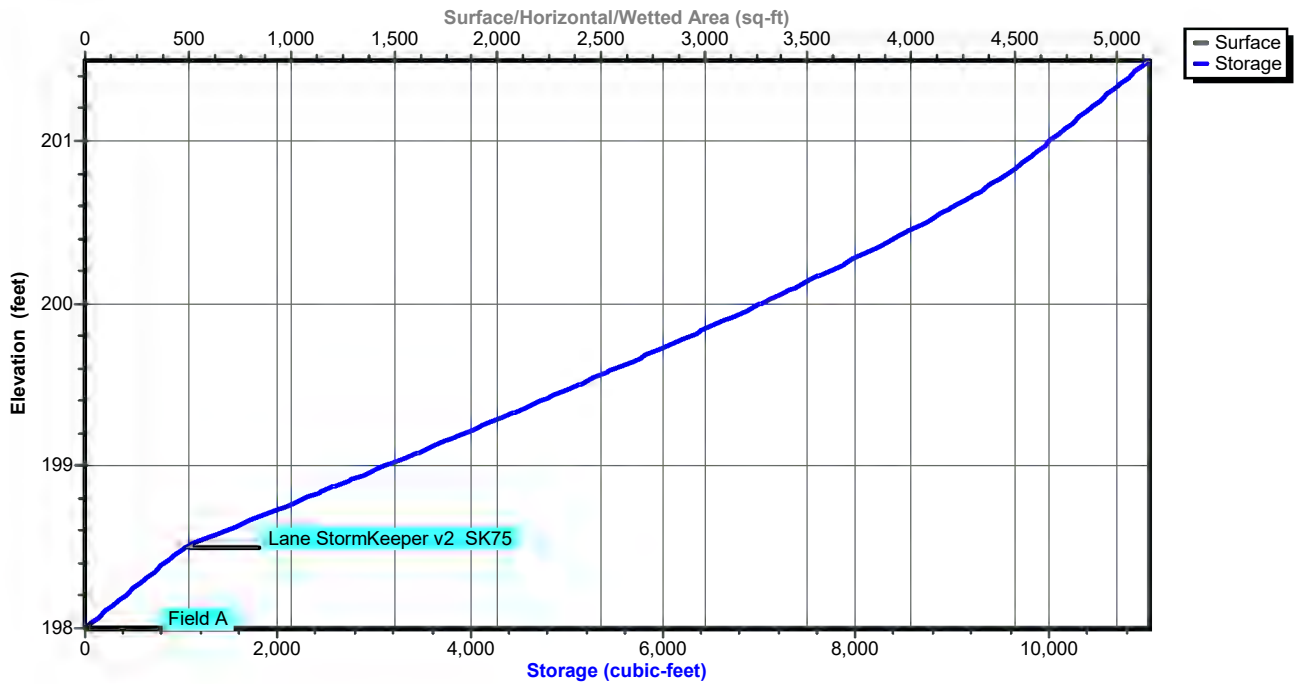
### Pond 5P: Short - Stormkeeper Chamber

Hydrograph



### Pond 5P: Short - Stormkeeper Chamber

Stage-Area-Storage



**Hydrograph for Pond 5P: Short - Stormkeeper Chamber**

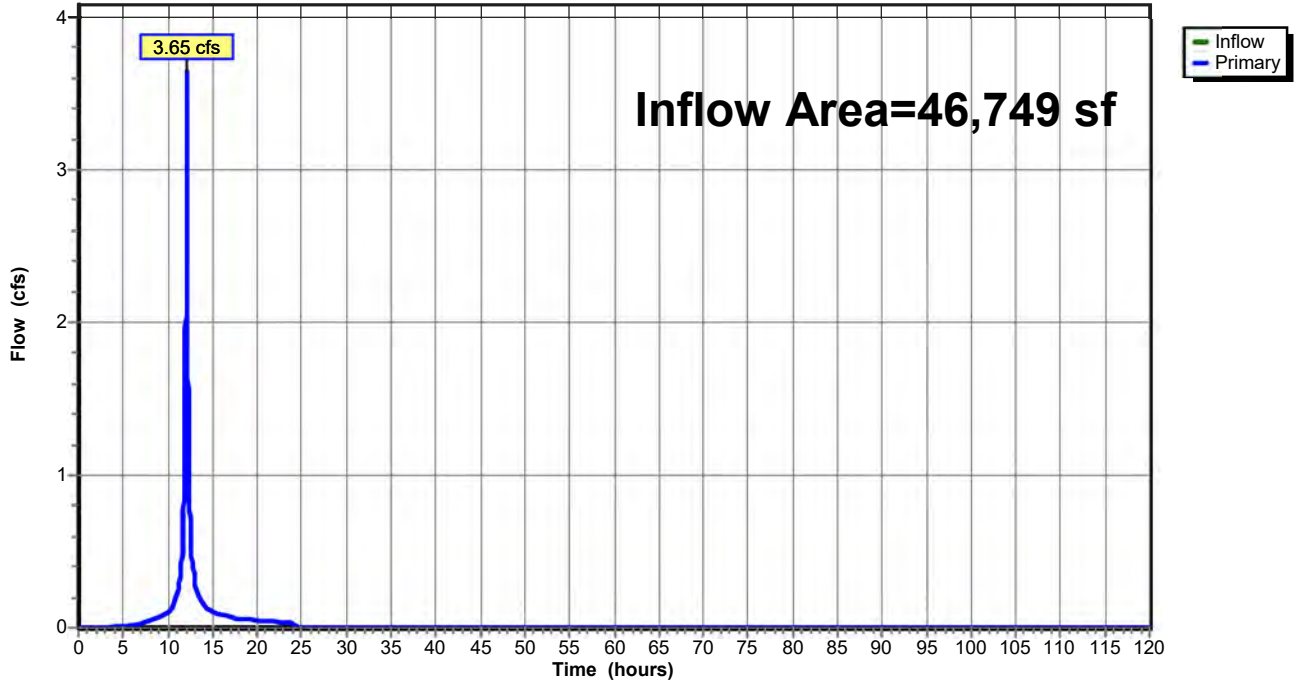
Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	198.00	0.00	0.00	0.00
5.00	0.02	26	198.01	0.01	<b>0.01</b>	0.00
10.00	<b>0.10</b>	<b>338</b>	<b>198.16</b>	<b>0.03</b>	<b>0.03</b>	<b>0.00</b>
15.00	<b>0.10</b>	<b>3,359</b>	<b>199.06</b>	<b>0.16</b>	0.03	<b>0.12</b>
20.00	0.05	2,908	198.95	0.06	0.03	0.02
25.00	0.00	2,649	198.89	0.04	0.03	0.00
30.00	0.00	2,046	198.74	0.03	0.03	0.00
35.00	0.00	1,445	198.60	0.03	0.03	0.00
40.00	0.00	844	198.41	0.03	0.03	0.00
45.00	0.00	243	198.12	0.03	0.03	0.00
50.00	0.00	0	198.00	0.00	0.00	0.00
55.00	0.00	0	198.00	0.00	0.00	0.00
60.00	0.00	0	198.00	0.00	0.00	0.00
65.00	0.00	0	198.00	0.00	0.00	0.00
70.00	0.00	0	198.00	0.00	0.00	0.00
75.00	0.00	0	198.00	0.00	0.00	0.00
80.00	0.00	0	198.00	0.00	0.00	0.00
85.00	0.00	0	198.00	0.00	0.00	0.00
90.00	0.00	0	198.00	0.00	0.00	0.00
95.00	0.00	0	198.00	0.00	0.00	0.00
100.00	0.00	0	198.00	0.00	0.00	0.00
105.00	0.00	0	198.00	0.00	0.00	0.00
110.00	0.00	0	198.00	0.00	0.00	0.00
115.00	0.00	0	198.00	0.00	0.00	0.00
120.00	0.00	0	198.00	0.00	0.00	0.00

**Stage-Area-Storage for Pond 5P: Short - Stormkeeper Chamber**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
198.00	5,154	0	200.60	5,154	9,027
198.05	5,154	103	200.65	5,154	9,173
198.10	5,154	206	200.70	5,154	9,312
198.15	5,154	309	200.75	5,154	9,444
198.20	5,154	412	200.80	5,154	9,569
198.25	5,154	515	200.85	5,154	9,688
198.30	5,154	618	200.90	5,154	9,802
198.35	5,154	722	200.95	5,154	9,910
198.40	5,154	825	201.00	5,154	10,015
198.45	5,154	928	201.05	5,154	10,118
198.50	5,154	1,031	201.10	5,154	10,221
198.55	5,154	1,242	201.15	5,154	10,324
198.60	5,154	1,452	201.20	5,154	10,427
198.65	5,154	1,662	201.25	5,154	10,530
198.70	5,154	1,872	201.30	5,154	10,633
198.75	5,154	2,080	201.35	5,154	10,736
198.80	5,154	2,289	201.40	5,154	10,839
198.85	5,154	2,496	201.45	5,154	10,943
198.90	5,154	2,703	201.50	5,154	11,046
198.95	5,154	2,909			
199.00	5,154	3,114			
199.05	5,154	3,319			
199.10	5,154	3,523			
199.15	5,154	3,726			
199.20	5,154	3,928			
199.25	5,154	4,129			
199.30	5,154	4,329			
199.35	5,154	4,528			
199.40	5,154	4,727			
199.45	5,154	4,924			
199.50	5,154	5,120			
199.55	5,154	5,315			
199.60	5,154	5,509			
199.65	5,154	5,702			
199.70	5,154	5,894			
199.75	5,154	6,084			
199.80	5,154	6,273			
199.85	5,154	6,460			
199.90	5,154	6,646			
199.95	5,154	6,830			
200.00	5,154	7,012			
200.05	5,154	7,193			
200.10	5,154	7,372			
200.15	5,154	7,549			
200.20	5,154	7,724			
200.25	5,154	7,896			
200.30	5,154	8,067			
200.35	5,154	8,235			
200.40	5,154	8,400			
200.45	5,154	8,562			
200.50	5,154	8,721			
200.55	5,154	8,876			

### Pond E: POA-1-E

Hydrograph

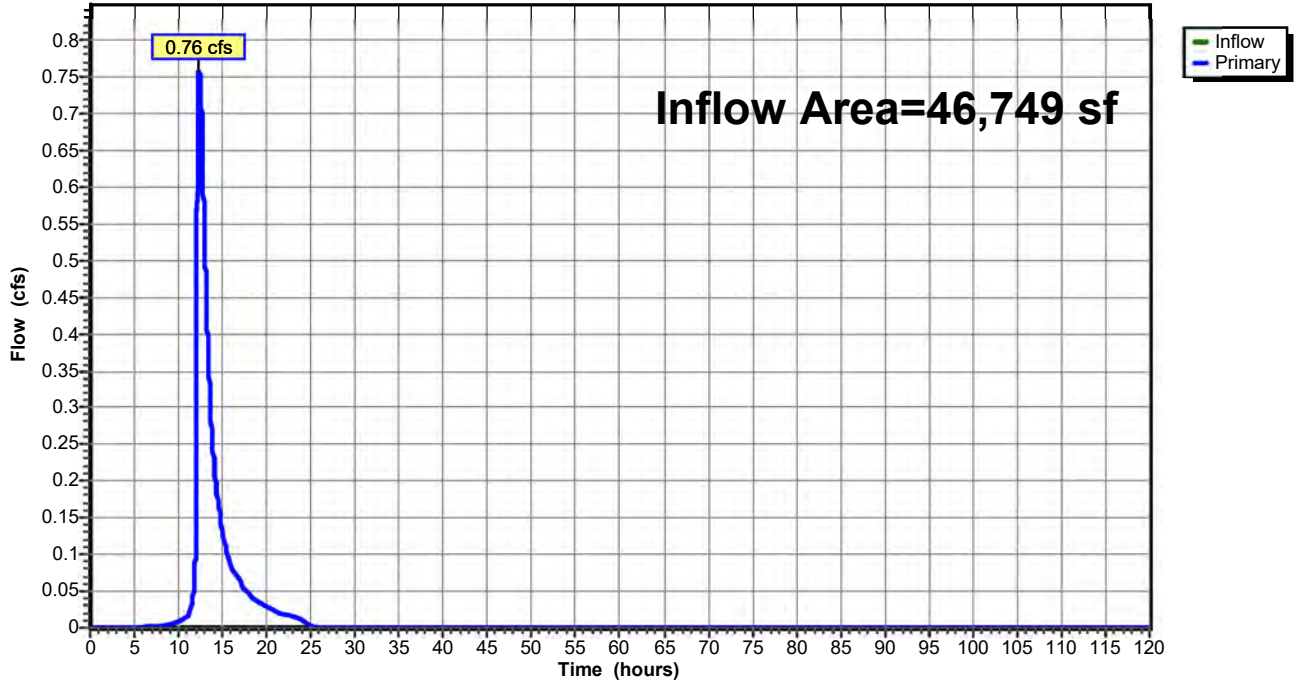


**Hydrograph for Pond E: POA-1-E**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	104.00	0.00		0.00
2.00	0.00		0.00	106.00	0.00		0.00
4.00	0.01		0.01	108.00	0.00		0.00
6.00	0.02		0.02	110.00	0.00		0.00
8.00	0.05		0.05	112.00	0.00		0.00
10.00	0.10		0.10	114.00	0.00		0.00
12.00	<b>2.04</b>		<b>2.04</b>	116.00	0.00		0.00
14.00	<b>0.15</b>		<b>0.15</b>	118.00	0.00		0.00
16.00	0.08		0.08	120.00	0.00		0.00
18.00	0.06		0.06				
20.00	0.05		0.05				
22.00	0.04		0.04				
24.00	0.04		0.04				
26.00	0.00		0.00				
28.00	0.00		0.00				
30.00	0.00		0.00				
32.00	0.00		0.00				
34.00	0.00		0.00				
36.00	0.00		0.00				
38.00	0.00		0.00				
40.00	0.00		0.00				
42.00	0.00		0.00				
44.00	0.00		0.00				
46.00	0.00		0.00				
48.00	0.00		0.00				
50.00	0.00		0.00				
52.00	0.00		0.00				
54.00	0.00		0.00				
56.00	0.00		0.00				
58.00	0.00		0.00				
60.00	0.00		0.00				
62.00	0.00		0.00				
64.00	0.00		0.00				
66.00	0.00		0.00				
68.00	0.00		0.00				
70.00	0.00		0.00				
72.00	0.00		0.00				
74.00	0.00		0.00				
76.00	0.00		0.00				
78.00	0.00		0.00				
80.00	0.00		0.00				
82.00	0.00		0.00				
84.00	0.00		0.00				
86.00	0.00		0.00				
88.00	0.00		0.00				
90.00	0.00		0.00				
92.00	0.00		0.00				
94.00	0.00		0.00				
96.00	0.00		0.00				
98.00	0.00		0.00				
100.00	0.00		0.00				
102.00	0.00		0.00				

### Pond P: POA-1-P

#### Hydrograph

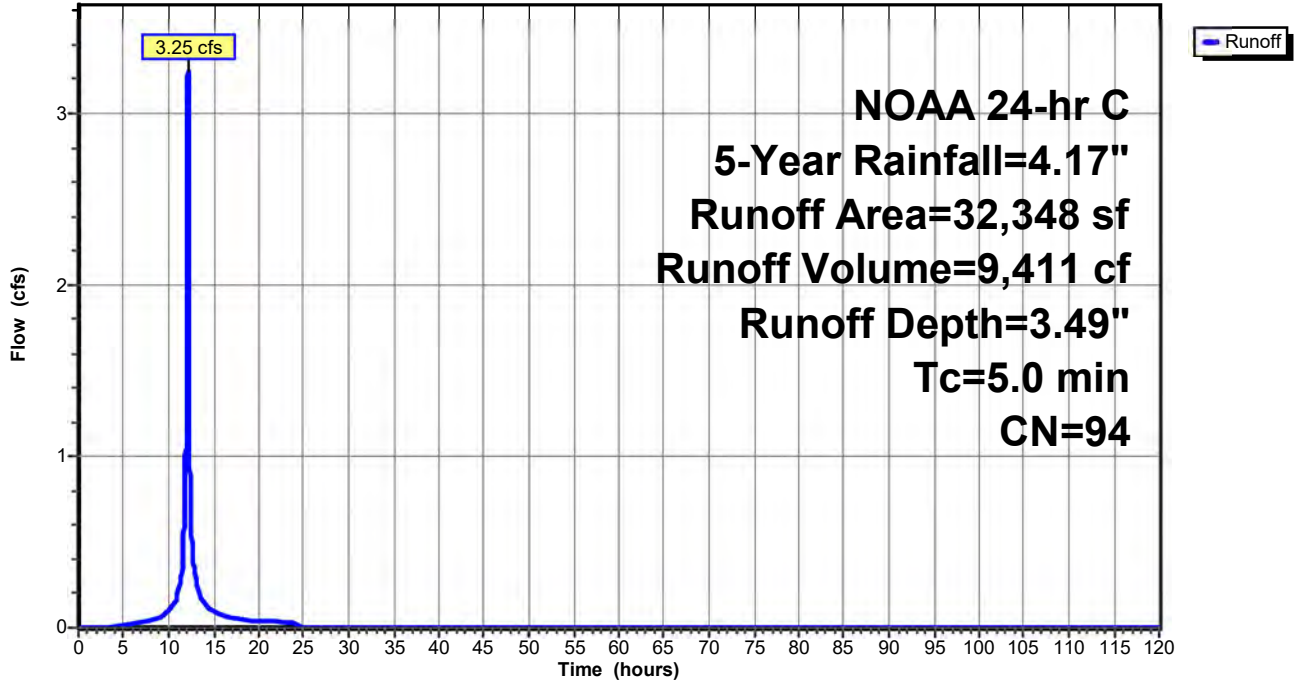


**Hydrograph for Pond P: POA-1-P**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	104.00	0.00		0.00
2.00	0.00		0.00	106.00	0.00		0.00
4.00	0.00		0.00	108.00	0.00		0.00
6.00	0.00		0.00	110.00	0.00		0.00
8.00	0.00		0.00	112.00	0.00		0.00
10.00	0.01		0.01	114.00	0.00		0.00
12.00	<b>0.16</b>		<b>0.16</b>	116.00	0.00		0.00
14.00	<b>0.23</b>		<b>0.23</b>	118.00	0.00		0.00
16.00	0.08		0.08	120.00	0.00		0.00
18.00	0.05		0.05				
20.00	0.03		0.03				
22.00	0.02		0.02				
24.00	0.01		0.01				
26.00	0.00		0.00				
28.00	0.00		0.00				
30.00	0.00		0.00				
32.00	0.00		0.00				
34.00	0.00		0.00				
36.00	0.00		0.00				
38.00	0.00		0.00				
40.00	0.00		0.00				
42.00	0.00		0.00				
44.00	0.00		0.00				
46.00	0.00		0.00				
48.00	0.00		0.00				
50.00	0.00		0.00				
52.00	0.00		0.00				
54.00	0.00		0.00				
56.00	0.00		0.00				
58.00	0.00		0.00				
60.00	0.00		0.00				
62.00	0.00		0.00				
64.00	0.00		0.00				
66.00	0.00		0.00				
68.00	0.00		0.00				
70.00	0.00		0.00				
72.00	0.00		0.00				
74.00	0.00		0.00				
76.00	0.00		0.00				
78.00	0.00		0.00				
80.00	0.00		0.00				
82.00	0.00		0.00				
84.00	0.00		0.00				
86.00	0.00		0.00				
88.00	0.00		0.00				
90.00	0.00		0.00				
92.00	0.00		0.00				
94.00	0.00		0.00				
96.00	0.00		0.00				
98.00	0.00		0.00				
100.00	0.00		0.00				
102.00	0.00		0.00				

**Subcatchment 1E: Disturbed Managed**

Hydrograph

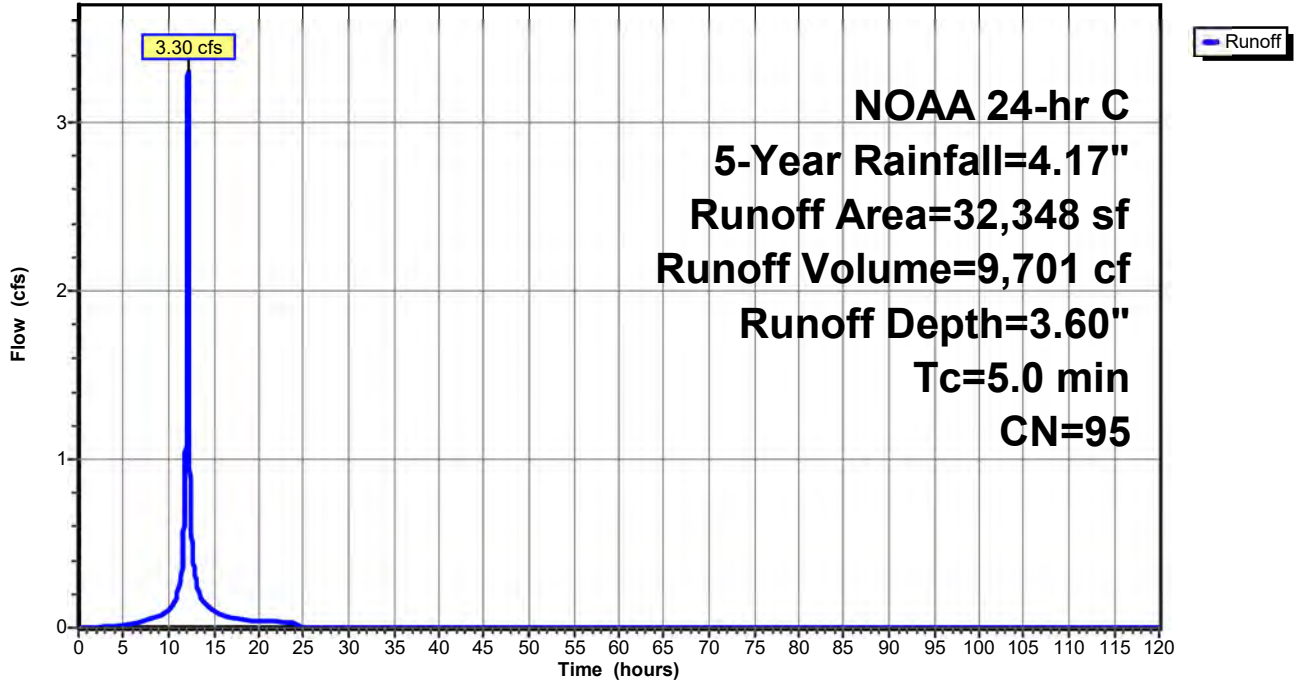


**Hydrograph for Subcatchment 1E: Disturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	4.17	3.49	0.00
2.00	0.09	0.00	0.00	106.00	4.17	3.49	0.00
4.00	0.20	0.01	0.01	108.00	4.17	3.49	0.00
6.00	0.33	0.05	0.02	110.00	4.17	3.49	0.00
8.00	0.50	0.14	0.04	112.00	4.17	3.49	0.00
10.00	0.76	0.31	0.10	114.00	4.17	3.49	0.00
12.00	1.99	1.38	<b>1.83</b>	116.00	4.17	3.49	0.00
14.00	3.41	2.75	<b>0.14</b>	118.00	4.17	3.49	0.00
16.00	3.67	3.00	0.07	120.00	4.17	3.49	0.00
18.00	3.84	3.17	0.05				
20.00	3.97	3.29	0.04				
22.00	4.08	3.40	0.04				
24.00	<b>4.17</b>	<b>3.49</b>	0.04				
26.00	4.17	3.49	0.00				
28.00	4.17	3.49	0.00				
30.00	4.17	3.49	0.00				
32.00	4.17	3.49	0.00				
34.00	4.17	3.49	0.00				
36.00	4.17	3.49	0.00				
38.00	4.17	3.49	0.00				
40.00	4.17	3.49	0.00				
42.00	4.17	3.49	0.00				
44.00	4.17	3.49	0.00				
46.00	4.17	3.49	0.00				
48.00	4.17	3.49	0.00				
50.00	4.17	3.49	0.00				
52.00	4.17	3.49	0.00				
54.00	4.17	3.49	0.00				
56.00	4.17	3.49	0.00				
58.00	4.17	3.49	0.00				
60.00	4.17	3.49	0.00				
62.00	4.17	3.49	0.00				
64.00	4.17	3.49	0.00				
66.00	4.17	3.49	0.00				
68.00	4.17	3.49	0.00				
70.00	4.17	3.49	0.00				
72.00	4.17	3.49	0.00				
74.00	4.17	3.49	0.00				
76.00	4.17	3.49	0.00				
78.00	4.17	3.49	0.00				
80.00	4.17	3.49	0.00				
82.00	4.17	3.49	0.00				
84.00	4.17	3.49	0.00				
86.00	4.17	3.49	0.00				
88.00	4.17	3.49	0.00				
90.00	4.17	3.49	0.00				
92.00	4.17	3.49	0.00				
94.00	4.17	3.49	0.00				
96.00	4.17	3.49	0.00				
98.00	4.17	3.49	0.00				
100.00	4.17	3.49	0.00				
102.00	4.17	3.49	0.00				

### Subcatchment 1P: Disturbed Managed

Hydrograph



**2025.08.04 - Noble Town Center - New System**

NOAA 24-hr C 5-Year Rainfall=4.17"

Prepared by Langan Engineering

Printed 8/5/2025

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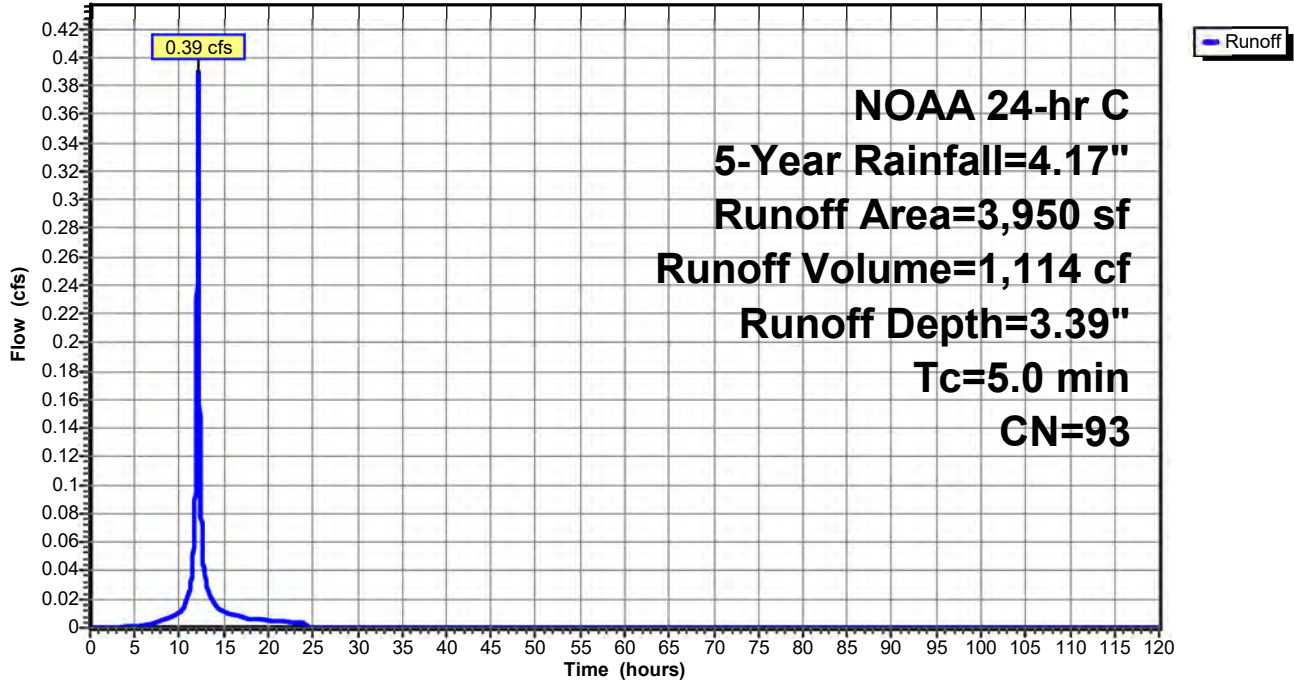
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**Hydrograph for Subcatchment 1P: Disturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	4.17	3.60	0.00
2.00	0.09	0.00	0.00	106.00	4.17	3.60	0.00
4.00	0.20	0.02	0.01	108.00	4.17	3.60	0.00
6.00	0.33	0.07	0.03	110.00	4.17	3.60	0.00
8.00	0.50	0.17	0.05	112.00	4.17	3.60	0.00
10.00	0.76	0.36	0.11	114.00	4.17	3.60	0.00
12.00	1.99	1.47	<b>1.87</b>	116.00	4.17	3.60	0.00
14.00	3.41	2.85	<b>0.14</b>	118.00	4.17	3.60	0.00
16.00	3.67	3.11	0.08	120.00	4.17	3.60	0.00
18.00	3.84	3.27	0.05				
20.00	3.97	3.40	0.04				
22.00	4.08	3.51	0.04				
24.00	<b>4.17</b>	<b>3.60</b>	0.04				
26.00	4.17	3.60	0.00				
28.00	4.17	3.60	0.00				
30.00	4.17	3.60	0.00				
32.00	4.17	3.60	0.00				
34.00	4.17	3.60	0.00				
36.00	4.17	3.60	0.00				
38.00	4.17	3.60	0.00				
40.00	4.17	3.60	0.00				
42.00	4.17	3.60	0.00				
44.00	4.17	3.60	0.00				
46.00	4.17	3.60	0.00				
48.00	4.17	3.60	0.00				
50.00	4.17	3.60	0.00				
52.00	4.17	3.60	0.00				
54.00	4.17	3.60	0.00				
56.00	4.17	3.60	0.00				
58.00	4.17	3.60	0.00				
60.00	4.17	3.60	0.00				
62.00	4.17	3.60	0.00				
64.00	4.17	3.60	0.00				
66.00	4.17	3.60	0.00				
68.00	4.17	3.60	0.00				
70.00	4.17	3.60	0.00				
72.00	4.17	3.60	0.00				
74.00	4.17	3.60	0.00				
76.00	4.17	3.60	0.00				
78.00	4.17	3.60	0.00				
80.00	4.17	3.60	0.00				
82.00	4.17	3.60	0.00				
84.00	4.17	3.60	0.00				
86.00	4.17	3.60	0.00				
88.00	4.17	3.60	0.00				
90.00	4.17	3.60	0.00				
92.00	4.17	3.60	0.00				
94.00	4.17	3.60	0.00				
96.00	4.17	3.60	0.00				
98.00	4.17	3.60	0.00				
100.00	4.17	3.60	0.00				
102.00	4.17	3.60	0.00				

Subcatchment 2E: Disturbed Unmanaged

Hydrograph

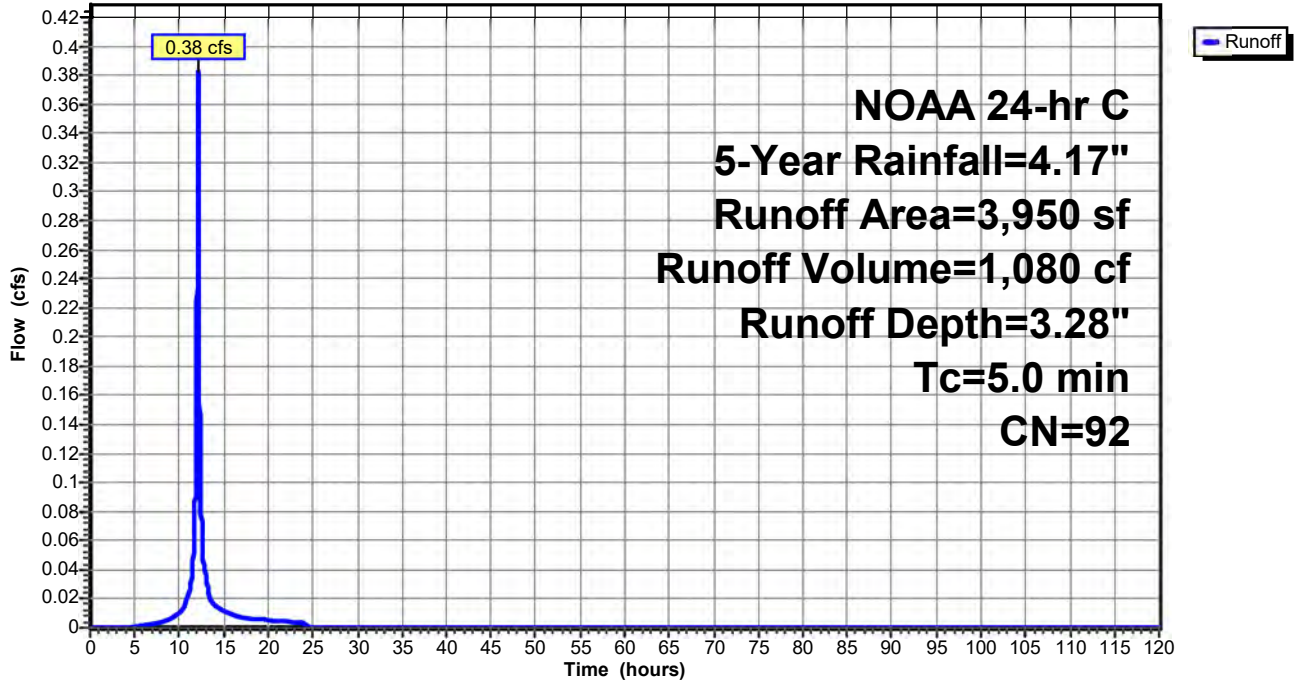


**Hydrograph for Subcatchment 2E: Disturbed Unmanaged**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	4.17	3.39	0.00
2.00	0.09	0.00	0.00	106.00	4.17	3.39	0.00
4.00	0.20	0.00	0.00	108.00	4.17	3.39	0.00
6.00	0.33	0.03	0.00	110.00	4.17	3.39	0.00
8.00	0.50	0.11	0.00	112.00	4.17	3.39	0.00
10.00	0.76	0.27	0.01	114.00	4.17	3.39	0.00
12.00	1.99	1.30	<b>0.22</b>	116.00	4.17	3.39	0.00
14.00	3.41	2.65	<b>0.02</b>	118.00	4.17	3.39	0.00
16.00	3.67	2.90	0.01	120.00	4.17	3.39	0.00
18.00	3.84	3.06	0.01				
20.00	3.97	3.19	0.01				
22.00	4.08	3.29	0.00				
24.00	<b>4.17</b>	<b>3.39</b>	0.00				
26.00	4.17	3.39	0.00				
28.00	4.17	3.39	0.00				
30.00	4.17	3.39	0.00				
32.00	4.17	3.39	0.00				
34.00	4.17	3.39	0.00				
36.00	4.17	3.39	0.00				
38.00	4.17	3.39	0.00				
40.00	4.17	3.39	0.00				
42.00	4.17	3.39	0.00				
44.00	4.17	3.39	0.00				
46.00	4.17	3.39	0.00				
48.00	4.17	3.39	0.00				
50.00	4.17	3.39	0.00				
52.00	4.17	3.39	0.00				
54.00	4.17	3.39	0.00				
56.00	4.17	3.39	0.00				
58.00	4.17	3.39	0.00				
60.00	4.17	3.39	0.00				
62.00	4.17	3.39	0.00				
64.00	4.17	3.39	0.00				
66.00	4.17	3.39	0.00				
68.00	4.17	3.39	0.00				
70.00	4.17	3.39	0.00				
72.00	4.17	3.39	0.00				
74.00	4.17	3.39	0.00				
76.00	4.17	3.39	0.00				
78.00	4.17	3.39	0.00				
80.00	4.17	3.39	0.00				
82.00	4.17	3.39	0.00				
84.00	4.17	3.39	0.00				
86.00	4.17	3.39	0.00				
88.00	4.17	3.39	0.00				
90.00	4.17	3.39	0.00				
92.00	4.17	3.39	0.00				
94.00	4.17	3.39	0.00				
96.00	4.17	3.39	0.00				
98.00	4.17	3.39	0.00				
100.00	4.17	3.39	0.00				
102.00	4.17	3.39	0.00				

Subcatchment 2P: Disturbed Unmanaged

Hydrograph

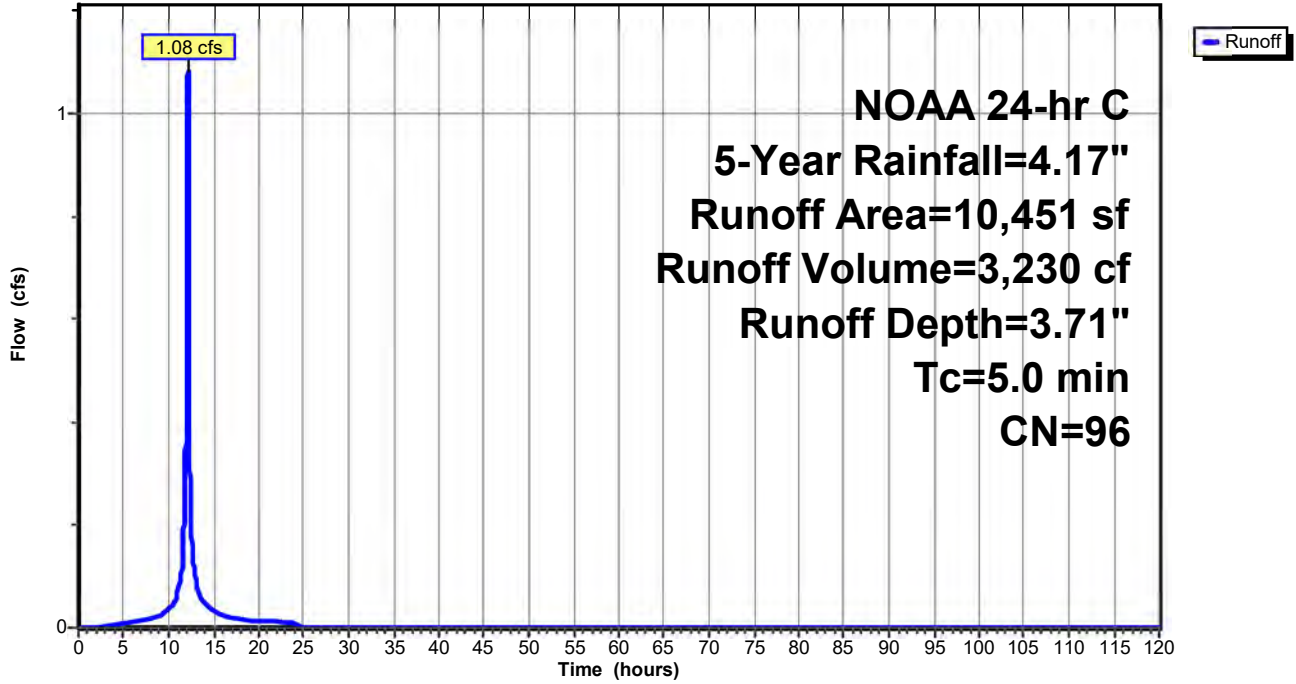


**Hydrograph for Subcatchment 2P: Disturbed Unmanaged**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	4.17	3.28	0.00
2.00	0.09	0.00	0.00	106.00	4.17	3.28	0.00
4.00	0.20	0.00	0.00	108.00	4.17	3.28	0.00
6.00	0.33	0.02	0.00	110.00	4.17	3.28	0.00
8.00	0.50	0.09	0.00	112.00	4.17	3.28	0.00
10.00	0.76	0.24	0.01	114.00	4.17	3.28	0.00
12.00	1.99	1.23	<b>0.21</b>	116.00	4.17	3.28	0.00
14.00	3.41	2.55	<b>0.02</b>	118.00	4.17	3.28	0.00
16.00	3.67	2.80	0.01	120.00	4.17	3.28	0.00
18.00	3.84	2.96	0.01				
20.00	3.97	3.08	0.01				
22.00	4.08	3.19	0.00				
24.00	<b>4.17</b>	<b>3.28</b>	0.00				
26.00	4.17	3.28	0.00				
28.00	4.17	3.28	0.00				
30.00	4.17	3.28	0.00				
32.00	4.17	3.28	0.00				
34.00	4.17	3.28	0.00				
36.00	4.17	3.28	0.00				
38.00	4.17	3.28	0.00				
40.00	4.17	3.28	0.00				
42.00	4.17	3.28	0.00				
44.00	4.17	3.28	0.00				
46.00	4.17	3.28	0.00				
48.00	4.17	3.28	0.00				
50.00	4.17	3.28	0.00				
52.00	4.17	3.28	0.00				
54.00	4.17	3.28	0.00				
56.00	4.17	3.28	0.00				
58.00	4.17	3.28	0.00				
60.00	4.17	3.28	0.00				
62.00	4.17	3.28	0.00				
64.00	4.17	3.28	0.00				
66.00	4.17	3.28	0.00				
68.00	4.17	3.28	0.00				
70.00	4.17	3.28	0.00				
72.00	4.17	3.28	0.00				
74.00	4.17	3.28	0.00				
76.00	4.17	3.28	0.00				
78.00	4.17	3.28	0.00				
80.00	4.17	3.28	0.00				
82.00	4.17	3.28	0.00				
84.00	4.17	3.28	0.00				
86.00	4.17	3.28	0.00				
88.00	4.17	3.28	0.00				
90.00	4.17	3.28	0.00				
92.00	4.17	3.28	0.00				
94.00	4.17	3.28	0.00				
96.00	4.17	3.28	0.00				
98.00	4.17	3.28	0.00				
100.00	4.17	3.28	0.00				
102.00	4.17	3.28	0.00				

Subcatchment 3E: Undisturbed Managed

Hydrograph

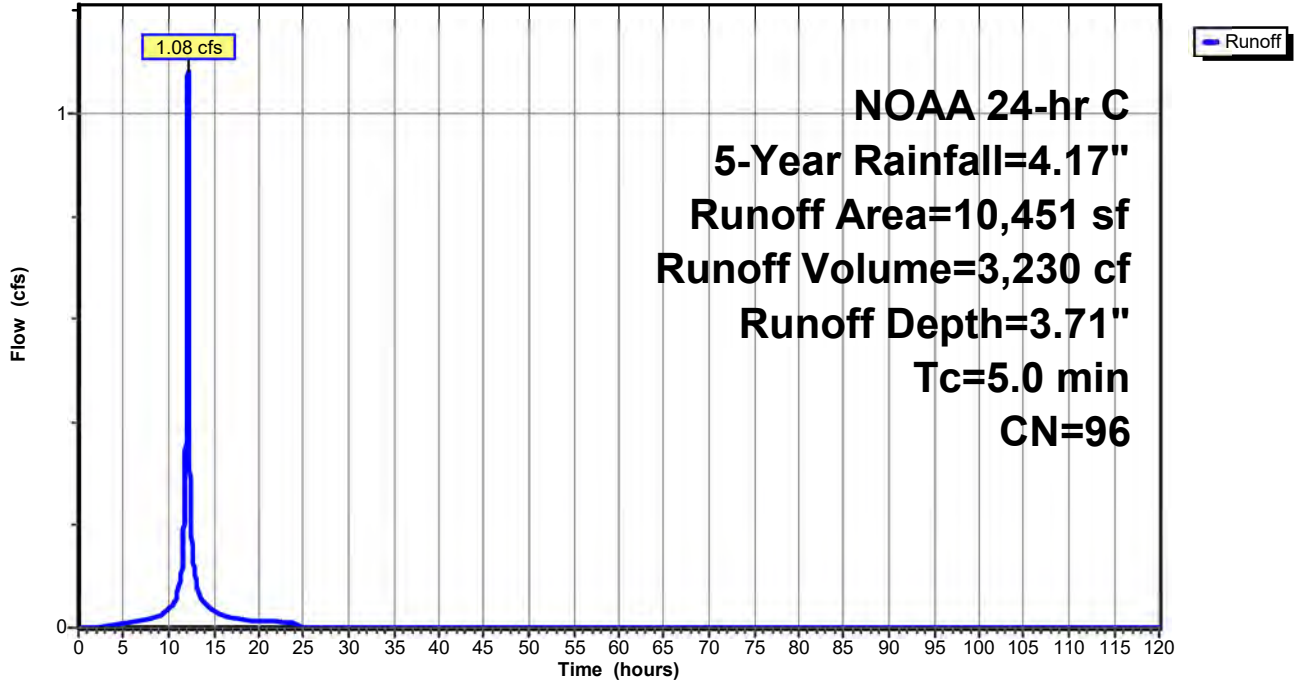


**Hydrograph for Subcatchment 3E: Undisturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	4.17	3.71	0.00
2.00	0.09	0.00	0.00	106.00	4.17	3.71	0.00
4.00	0.20	0.03	0.01	108.00	4.17	3.71	0.00
6.00	0.33	0.09	0.01	110.00	4.17	3.71	0.00
8.00	0.50	0.21	0.02	112.00	4.17	3.71	0.00
10.00	0.76	0.42	0.04	114.00	4.17	3.71	0.00
12.00	1.99	1.56	<b>0.62</b>	116.00	4.17	3.71	0.00
14.00	3.41	2.96	<b>0.04</b>	118.00	4.17	3.71	0.00
16.00	3.67	3.21	0.02	120.00	4.17	3.71	0.00
18.00	3.84	3.38	0.02				
20.00	3.97	3.51	0.01				
22.00	4.08	3.62	0.01				
24.00	<b>4.17</b>	<b>3.71</b>	0.01				
26.00	4.17	3.71	0.00				
28.00	4.17	3.71	0.00				
30.00	4.17	3.71	0.00				
32.00	4.17	3.71	0.00				
34.00	4.17	3.71	0.00				
36.00	4.17	3.71	0.00				
38.00	4.17	3.71	0.00				
40.00	4.17	3.71	0.00				
42.00	4.17	3.71	0.00				
44.00	4.17	3.71	0.00				
46.00	4.17	3.71	0.00				
48.00	4.17	3.71	0.00				
50.00	4.17	3.71	0.00				
52.00	4.17	3.71	0.00				
54.00	4.17	3.71	0.00				
56.00	4.17	3.71	0.00				
58.00	4.17	3.71	0.00				
60.00	4.17	3.71	0.00				
62.00	4.17	3.71	0.00				
64.00	4.17	3.71	0.00				
66.00	4.17	3.71	0.00				
68.00	4.17	3.71	0.00				
70.00	4.17	3.71	0.00				
72.00	4.17	3.71	0.00				
74.00	4.17	3.71	0.00				
76.00	4.17	3.71	0.00				
78.00	4.17	3.71	0.00				
80.00	4.17	3.71	0.00				
82.00	4.17	3.71	0.00				
84.00	4.17	3.71	0.00				
86.00	4.17	3.71	0.00				
88.00	4.17	3.71	0.00				
90.00	4.17	3.71	0.00				
92.00	4.17	3.71	0.00				
94.00	4.17	3.71	0.00				
96.00	4.17	3.71	0.00				
98.00	4.17	3.71	0.00				
100.00	4.17	3.71	0.00				
102.00	4.17	3.71	0.00				

Subcatchment 3P: Undisturbed Managed

Hydrograph

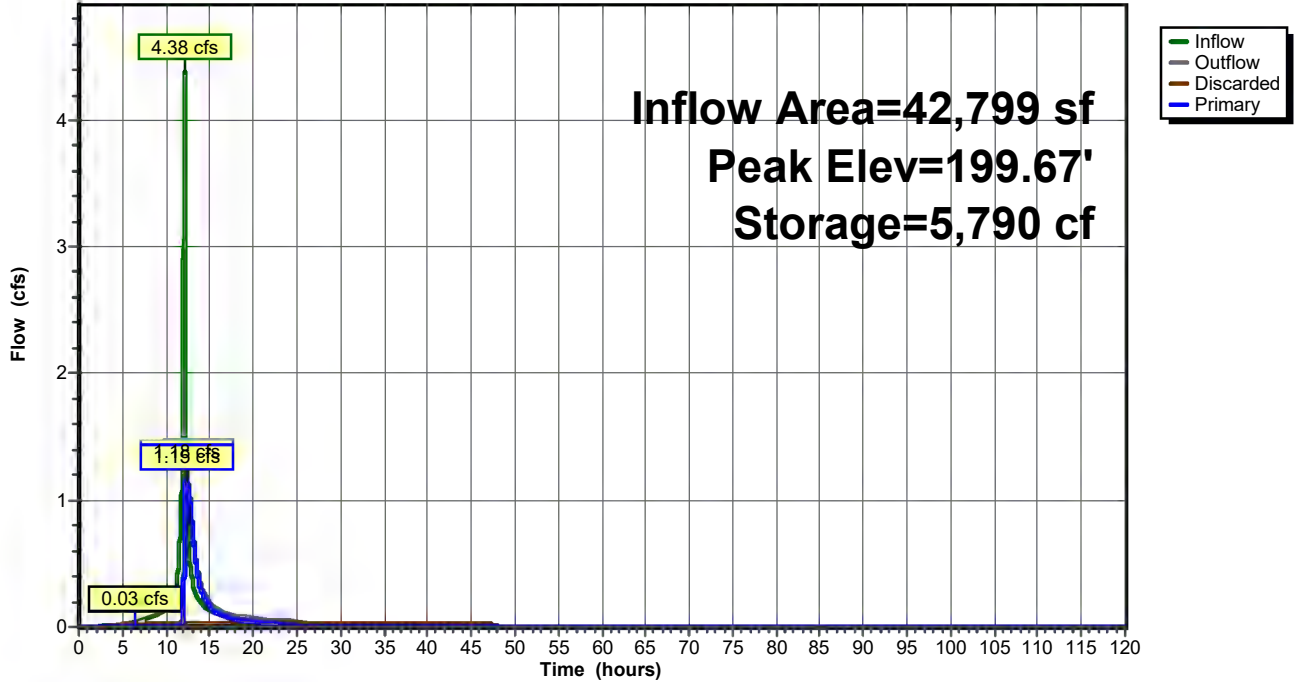


**Hydrograph for Subcatchment 3P: Undisturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	4.17	3.71	0.00
2.00	0.09	0.00	0.00	106.00	4.17	3.71	0.00
4.00	0.20	0.03	0.01	108.00	4.17	3.71	0.00
6.00	0.33	0.09	0.01	110.00	4.17	3.71	0.00
8.00	0.50	0.21	0.02	112.00	4.17	3.71	0.00
10.00	0.76	0.42	0.04	114.00	4.17	3.71	0.00
12.00	1.99	1.56	<b>0.62</b>	116.00	4.17	3.71	0.00
14.00	3.41	2.96	<b>0.04</b>	118.00	4.17	3.71	0.00
16.00	3.67	3.21	0.02	120.00	4.17	3.71	0.00
18.00	3.84	3.38	0.02				
20.00	3.97	3.51	0.01				
22.00	4.08	3.62	0.01				
24.00	<b>4.17</b>	<b>3.71</b>	0.01				
26.00	4.17	3.71	0.00				
28.00	4.17	3.71	0.00				
30.00	4.17	3.71	0.00				
32.00	4.17	3.71	0.00				
34.00	4.17	3.71	0.00				
36.00	4.17	3.71	0.00				
38.00	4.17	3.71	0.00				
40.00	4.17	3.71	0.00				
42.00	4.17	3.71	0.00				
44.00	4.17	3.71	0.00				
46.00	4.17	3.71	0.00				
48.00	4.17	3.71	0.00				
50.00	4.17	3.71	0.00				
52.00	4.17	3.71	0.00				
54.00	4.17	3.71	0.00				
56.00	4.17	3.71	0.00				
58.00	4.17	3.71	0.00				
60.00	4.17	3.71	0.00				
62.00	4.17	3.71	0.00				
64.00	4.17	3.71	0.00				
66.00	4.17	3.71	0.00				
68.00	4.17	3.71	0.00				
70.00	4.17	3.71	0.00				
72.00	4.17	3.71	0.00				
74.00	4.17	3.71	0.00				
76.00	4.17	3.71	0.00				
78.00	4.17	3.71	0.00				
80.00	4.17	3.71	0.00				
82.00	4.17	3.71	0.00				
84.00	4.17	3.71	0.00				
86.00	4.17	3.71	0.00				
88.00	4.17	3.71	0.00				
90.00	4.17	3.71	0.00				
92.00	4.17	3.71	0.00				
94.00	4.17	3.71	0.00				
96.00	4.17	3.71	0.00				
98.00	4.17	3.71	0.00				
100.00	4.17	3.71	0.00				
102.00	4.17	3.71	0.00				

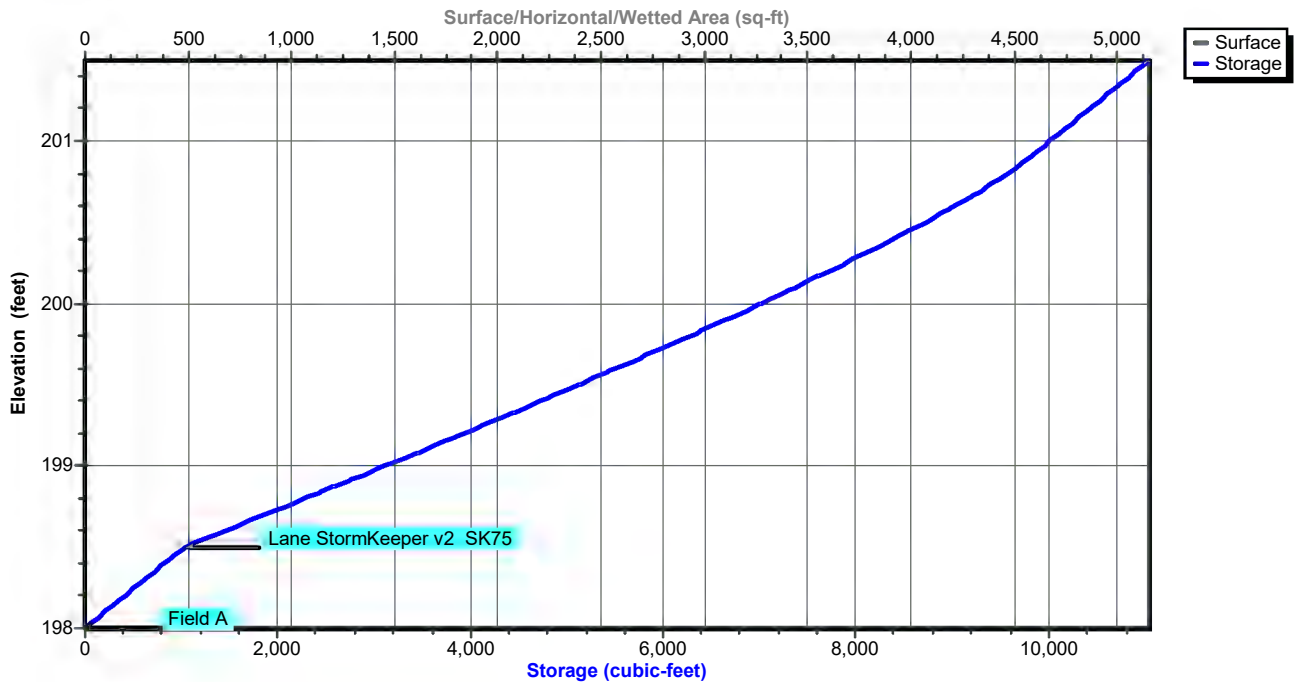
### Pond 5P: Short - Stormkeeper Chamber

Hydrograph



### Pond 5P: Short - Stormkeeper Chamber

Stage-Area-Storage



**Hydrograph for Pond 5P: Short - Stormkeeper Chamber**

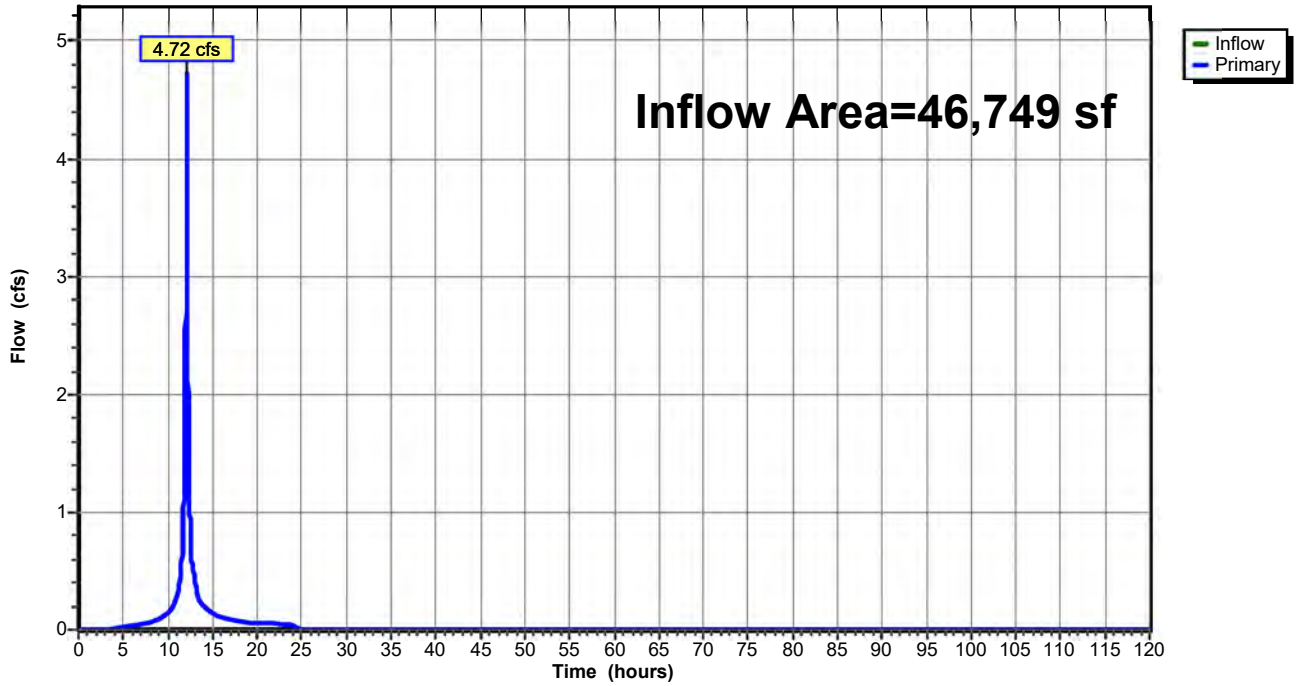
Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	198.00	0.00	0.00	0.00
5.00	0.03	46	198.02	0.02	<b>0.02</b>	0.00
10.00	<b>0.14</b>	<b>638</b>	<b>198.31</b>	<b>0.03</b>	<b>0.03</b>	<b>0.00</b>
15.00	<b>0.12</b>	<b>3,478</b>	<b>199.09</b>	<b>0.19</b>	0.03	<b>0.16</b>
20.00	0.06	2,990	198.97	0.07	0.03	0.04
25.00	0.00	2,718	198.90	0.04	0.03	0.00
30.00	0.00	2,109	198.76	0.03	0.03	0.00
35.00	0.00	1,508	198.61	0.03	0.03	0.00
40.00	0.00	906	198.44	0.03	0.03	0.00
45.00	0.00	305	198.15	0.03	0.03	0.00
50.00	0.00	0	198.00	0.00	0.00	0.00
55.00	0.00	0	198.00	0.00	0.00	0.00
60.00	0.00	0	198.00	0.00	0.00	0.00
65.00	0.00	0	198.00	0.00	0.00	0.00
70.00	0.00	0	198.00	0.00	0.00	0.00
75.00	0.00	0	198.00	0.00	0.00	0.00
80.00	0.00	0	198.00	0.00	0.00	0.00
85.00	0.00	0	198.00	0.00	0.00	0.00
90.00	0.00	0	198.00	0.00	0.00	0.00
95.00	0.00	0	198.00	0.00	0.00	0.00
100.00	0.00	0	198.00	0.00	0.00	0.00
105.00	0.00	0	198.00	0.00	0.00	0.00
110.00	0.00	0	198.00	0.00	0.00	0.00
115.00	0.00	0	198.00	0.00	0.00	0.00
120.00	0.00	0	198.00	0.00	0.00	0.00

**Stage-Area-Storage for Pond 5P: Short - Stormkeeper Chamber**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
198.00	5,154	0	200.60	5,154	9,027
198.05	5,154	103	200.65	5,154	9,173
198.10	5,154	206	200.70	5,154	9,312
198.15	5,154	309	200.75	5,154	9,444
198.20	5,154	412	200.80	5,154	9,569
198.25	5,154	515	200.85	5,154	9,688
198.30	5,154	618	200.90	5,154	9,802
198.35	5,154	722	200.95	5,154	9,910
198.40	5,154	825	201.00	5,154	10,015
198.45	5,154	928	201.05	5,154	10,118
198.50	5,154	1,031	201.10	5,154	10,221
198.55	5,154	1,242	201.15	5,154	10,324
198.60	5,154	1,452	201.20	5,154	10,427
198.65	5,154	1,662	201.25	5,154	10,530
198.70	5,154	1,872	201.30	5,154	10,633
198.75	5,154	2,080	201.35	5,154	10,736
198.80	5,154	2,289	201.40	5,154	10,839
198.85	5,154	2,496	201.45	5,154	10,943
198.90	5,154	2,703	201.50	5,154	11,046
198.95	5,154	2,909			
199.00	5,154	3,114			
199.05	5,154	3,319			
199.10	5,154	3,523			
199.15	5,154	3,726			
199.20	5,154	3,928			
199.25	5,154	4,129			
199.30	5,154	4,329			
199.35	5,154	4,528			
199.40	5,154	4,727			
199.45	5,154	4,924			
199.50	5,154	5,120			
199.55	5,154	5,315			
199.60	5,154	5,509			
199.65	5,154	5,702			
199.70	5,154	5,894			
199.75	5,154	6,084			
199.80	5,154	6,273			
199.85	5,154	6,460			
199.90	5,154	6,646			
199.95	5,154	6,830			
200.00	5,154	7,012			
200.05	5,154	7,193			
200.10	5,154	7,372			
200.15	5,154	7,549			
200.20	5,154	7,724			
200.25	5,154	7,896			
200.30	5,154	8,067			
200.35	5,154	8,235			
200.40	5,154	8,400			
200.45	5,154	8,562			
200.50	5,154	8,721			
200.55	5,154	8,876			

### Pond E: POA-1-E

Hydrograph

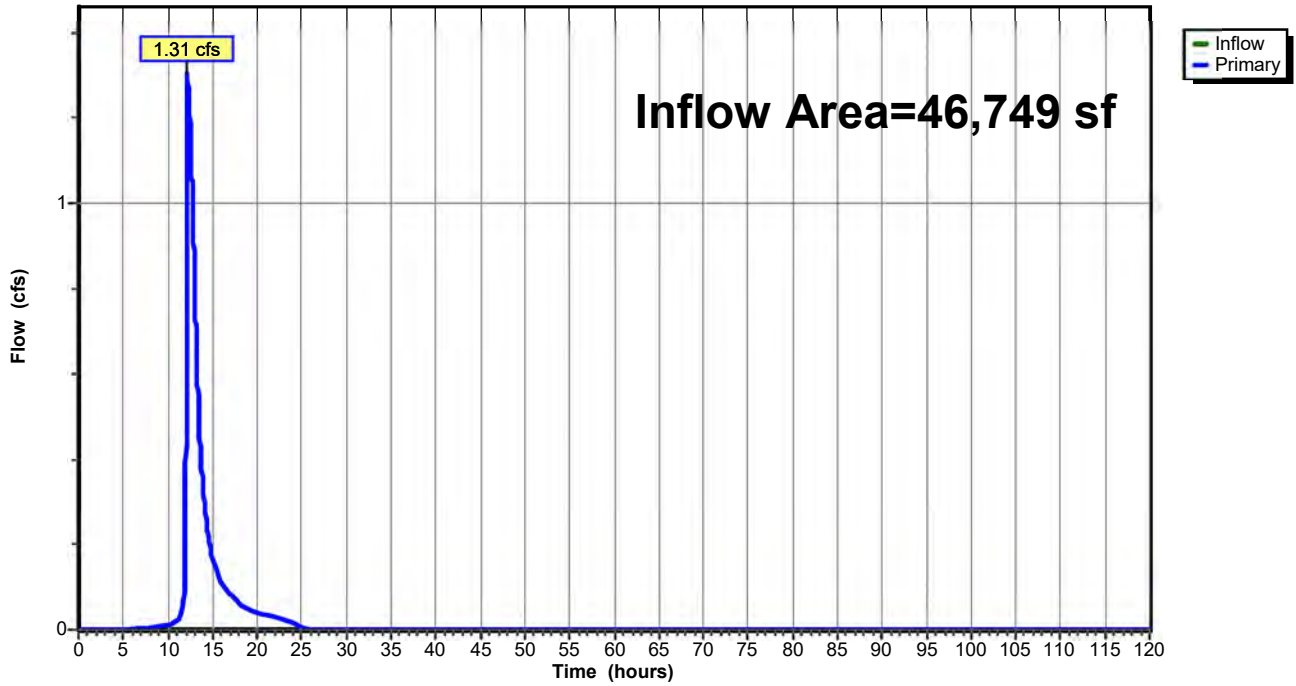


**Hydrograph for Pond E: POA-1-E**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	104.00	0.00		0.00
2.00	0.00		0.00	106.00	0.00		0.00
4.00	0.01		0.01	108.00	0.00		0.00
6.00	0.03		0.03	110.00	0.00		0.00
8.00	0.07		0.07	112.00	0.00		0.00
10.00	0.15		0.15	114.00	0.00		0.00
12.00	<b>2.67</b>		<b>2.67</b>	116.00	0.00		0.00
14.00	<b>0.20</b>		<b>0.20</b>	118.00	0.00		0.00
16.00	0.11		0.11	120.00	0.00		0.00
18.00	0.07		0.07				
20.00	0.06		0.06				
22.00	0.05		0.05				
24.00	0.05		0.05				
26.00	0.00		0.00				
28.00	0.00		0.00				
30.00	0.00		0.00				
32.00	0.00		0.00				
34.00	0.00		0.00				
36.00	0.00		0.00				
38.00	0.00		0.00				
40.00	0.00		0.00				
42.00	0.00		0.00				
44.00	0.00		0.00				
46.00	0.00		0.00				
48.00	0.00		0.00				
50.00	0.00		0.00				
52.00	0.00		0.00				
54.00	0.00		0.00				
56.00	0.00		0.00				
58.00	0.00		0.00				
60.00	0.00		0.00				
62.00	0.00		0.00				
64.00	0.00		0.00				
66.00	0.00		0.00				
68.00	0.00		0.00				
70.00	0.00		0.00				
72.00	0.00		0.00				
74.00	0.00		0.00				
76.00	0.00		0.00				
78.00	0.00		0.00				
80.00	0.00		0.00				
82.00	0.00		0.00				
84.00	0.00		0.00				
86.00	0.00		0.00				
88.00	0.00		0.00				
90.00	0.00		0.00				
92.00	0.00		0.00				
94.00	0.00		0.00				
96.00	0.00		0.00				
98.00	0.00		0.00				
100.00	0.00		0.00				
102.00	0.00		0.00				

### Pond P: POA-1-P

Hydrograph

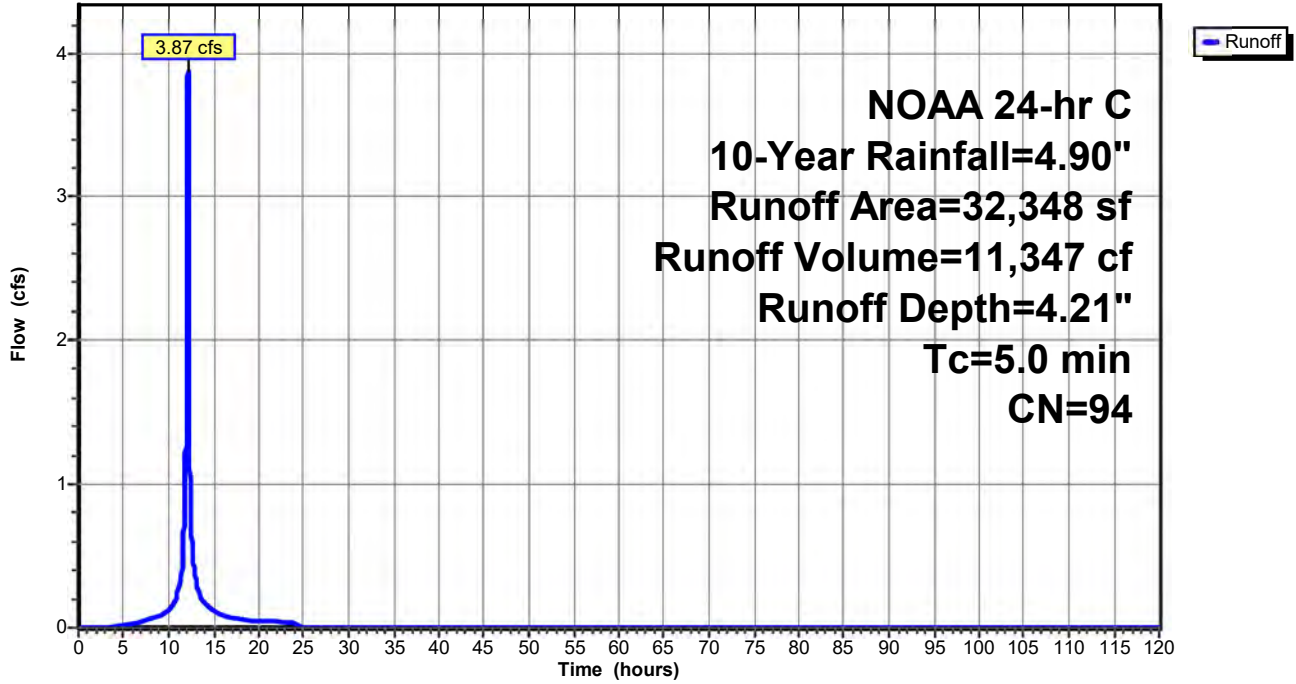


**Hydrograph for Pond P: POA-1-P**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	104.00	0.00		0.00
2.00	0.00		0.00	106.00	0.00		0.00
4.00	0.00		0.00	108.00	0.00		0.00
6.00	0.00		0.00	110.00	0.00		0.00
8.00	0.00		0.00	112.00	0.00		0.00
10.00	0.01		0.01	114.00	0.00		0.00
12.00	<b>0.43</b>		<b>0.43</b>	116.00	0.00		0.00
14.00	<b>0.31</b>		<b>0.31</b>	118.00	0.00		0.00
16.00	0.11		0.11	120.00	0.00		0.00
18.00	0.06		0.06				
20.00	0.04		0.04				
22.00	0.03		0.03				
24.00	0.02		0.02				
26.00	0.00		0.00				
28.00	0.00		0.00				
30.00	0.00		0.00				
32.00	0.00		0.00				
34.00	0.00		0.00				
36.00	0.00		0.00				
38.00	0.00		0.00				
40.00	0.00		0.00				
42.00	0.00		0.00				
44.00	0.00		0.00				
46.00	0.00		0.00				
48.00	0.00		0.00				
50.00	0.00		0.00				
52.00	0.00		0.00				
54.00	0.00		0.00				
56.00	0.00		0.00				
58.00	0.00		0.00				
60.00	0.00		0.00				
62.00	0.00		0.00				
64.00	0.00		0.00				
66.00	0.00		0.00				
68.00	0.00		0.00				
70.00	0.00		0.00				
72.00	0.00		0.00				
74.00	0.00		0.00				
76.00	0.00		0.00				
78.00	0.00		0.00				
80.00	0.00		0.00				
82.00	0.00		0.00				
84.00	0.00		0.00				
86.00	0.00		0.00				
88.00	0.00		0.00				
90.00	0.00		0.00				
92.00	0.00		0.00				
94.00	0.00		0.00				
96.00	0.00		0.00				
98.00	0.00		0.00				
100.00	0.00		0.00				
102.00	0.00		0.00				

Subcatchment 1E: Disturbed Managed

Hydrograph

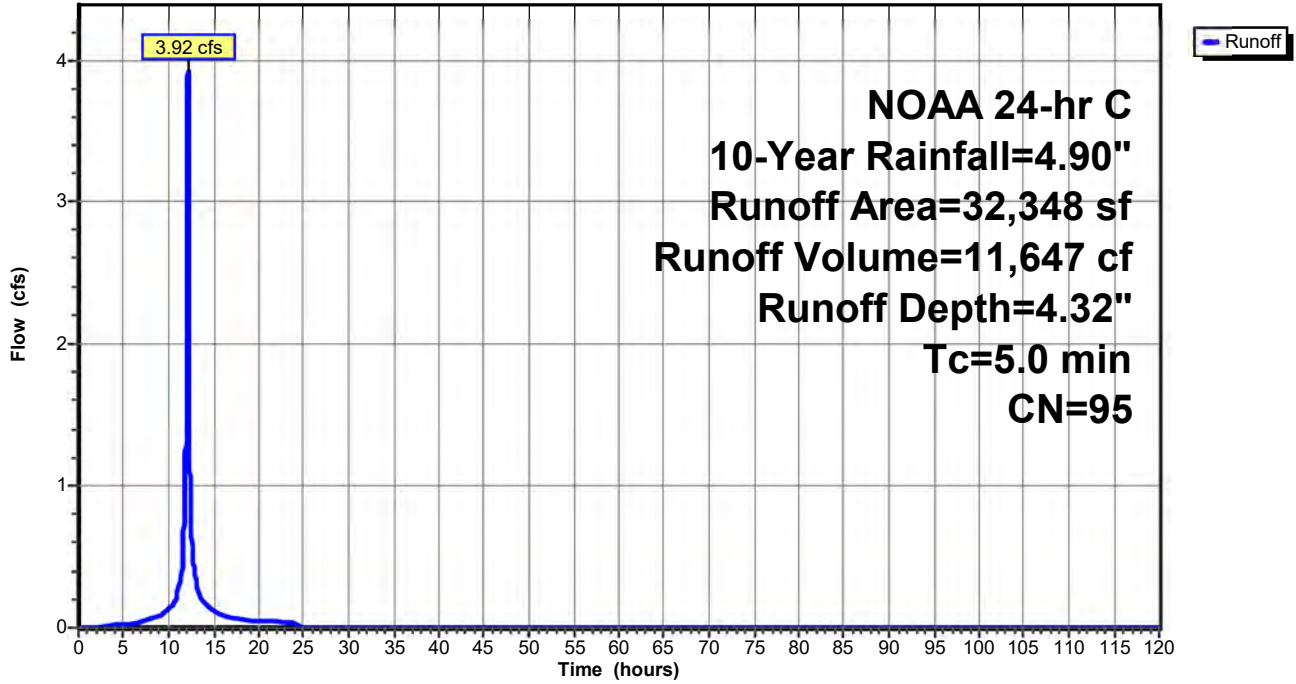


**Hydrograph for Subcatchment 1E: Disturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	4.90	4.21	0.00
2.00	0.11	0.00	0.00	106.00	4.90	4.21	0.00
4.00	0.24	0.02	0.01	108.00	4.90	4.21	0.00
6.00	0.39	0.08	0.03	110.00	4.90	4.21	0.00
8.00	0.59	0.19	0.06	112.00	4.90	4.21	0.00
10.00	0.89	0.42	0.12	114.00	4.90	4.21	0.00
12.00	2.34	1.71	<b>2.19</b>	116.00	4.90	4.21	0.00
14.00	4.01	3.33	<b>0.16</b>	118.00	4.90	4.21	0.00
16.00	4.31	3.63	0.09	120.00	4.90	4.21	0.00
18.00	4.51	3.83	0.06				
20.00	4.66	3.97	0.05				
22.00	4.79	4.10	0.04				
24.00	<b>4.90</b>	<b>4.21</b>	0.04				
26.00	4.90	4.21	0.00				
28.00	4.90	4.21	0.00				
30.00	4.90	4.21	0.00				
32.00	4.90	4.21	0.00				
34.00	4.90	4.21	0.00				
36.00	4.90	4.21	0.00				
38.00	4.90	4.21	0.00				
40.00	4.90	4.21	0.00				
42.00	4.90	4.21	0.00				
44.00	4.90	4.21	0.00				
46.00	4.90	4.21	0.00				
48.00	4.90	4.21	0.00				
50.00	4.90	4.21	0.00				
52.00	4.90	4.21	0.00				
54.00	4.90	4.21	0.00				
56.00	4.90	4.21	0.00				
58.00	4.90	4.21	0.00				
60.00	4.90	4.21	0.00				
62.00	4.90	4.21	0.00				
64.00	4.90	4.21	0.00				
66.00	4.90	4.21	0.00				
68.00	4.90	4.21	0.00				
70.00	4.90	4.21	0.00				
72.00	4.90	4.21	0.00				
74.00	4.90	4.21	0.00				
76.00	4.90	4.21	0.00				
78.00	4.90	4.21	0.00				
80.00	4.90	4.21	0.00				
82.00	4.90	4.21	0.00				
84.00	4.90	4.21	0.00				
86.00	4.90	4.21	0.00				
88.00	4.90	4.21	0.00				
90.00	4.90	4.21	0.00				
92.00	4.90	4.21	0.00				
94.00	4.90	4.21	0.00				
96.00	4.90	4.21	0.00				
98.00	4.90	4.21	0.00				
100.00	4.90	4.21	0.00				
102.00	4.90	4.21	0.00				

Subcatchment 1P: Disturbed Managed

Hydrograph

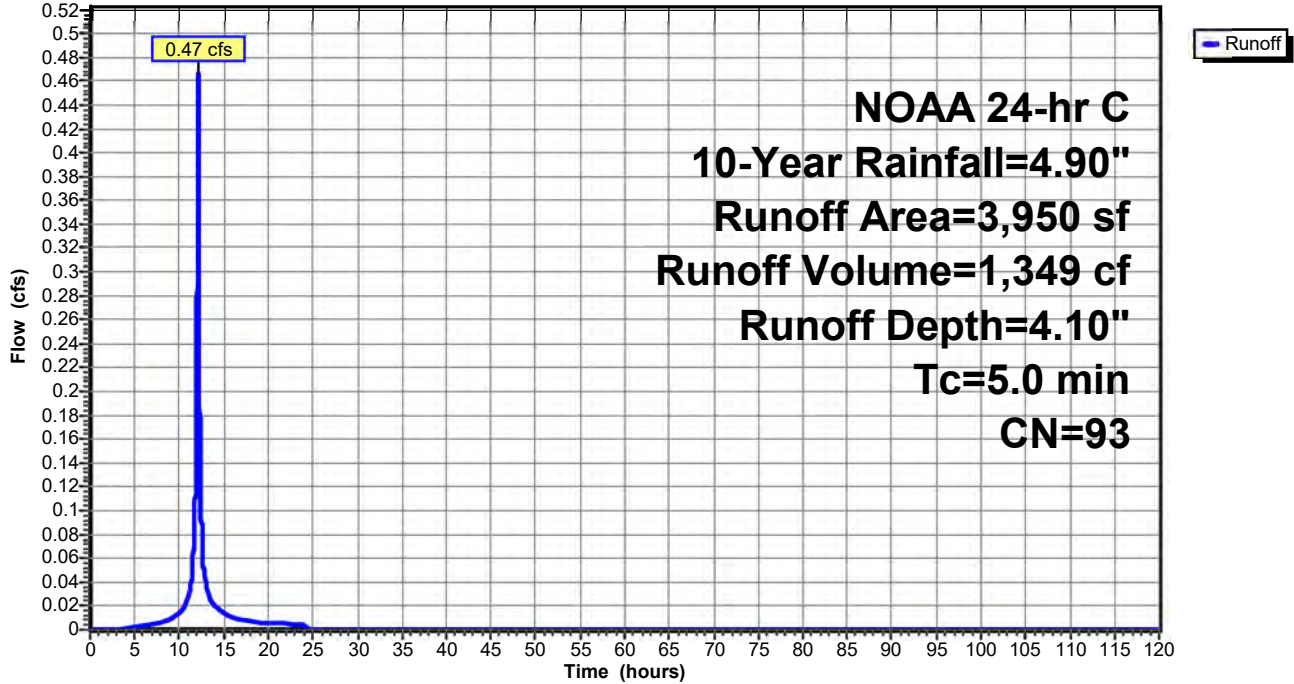


**Hydrograph for Subcatchment 1P: Disturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	4.90	4.32	0.00
2.00	0.11	0.00	0.00	106.00	4.90	4.32	0.00
4.00	0.24	0.03	0.02	108.00	4.90	4.32	0.00
6.00	0.39	0.10	0.03	110.00	4.90	4.32	0.00
8.00	0.59	0.23	0.06	112.00	4.90	4.32	0.00
10.00	0.89	0.47	0.13	114.00	4.90	4.32	0.00
12.00	2.34	1.80	<b>2.23</b>	116.00	4.90	4.32	0.00
14.00	4.01	3.44	<b>0.16</b>	118.00	4.90	4.32	0.00
16.00	4.31	3.74	0.09	120.00	4.90	4.32	0.00
18.00	4.51	3.94	0.06				
20.00	4.66	4.08	0.05				
22.00	4.79	4.21	0.04				
24.00	<b>4.90</b>	<b>4.32</b>	0.04				
26.00	4.90	4.32	0.00				
28.00	4.90	4.32	0.00				
30.00	4.90	4.32	0.00				
32.00	4.90	4.32	0.00				
34.00	4.90	4.32	0.00				
36.00	4.90	4.32	0.00				
38.00	4.90	4.32	0.00				
40.00	4.90	4.32	0.00				
42.00	4.90	4.32	0.00				
44.00	4.90	4.32	0.00				
46.00	4.90	4.32	0.00				
48.00	4.90	4.32	0.00				
50.00	4.90	4.32	0.00				
52.00	4.90	4.32	0.00				
54.00	4.90	4.32	0.00				
56.00	4.90	4.32	0.00				
58.00	4.90	4.32	0.00				
60.00	4.90	4.32	0.00				
62.00	4.90	4.32	0.00				
64.00	4.90	4.32	0.00				
66.00	4.90	4.32	0.00				
68.00	4.90	4.32	0.00				
70.00	4.90	4.32	0.00				
72.00	4.90	4.32	0.00				
74.00	4.90	4.32	0.00				
76.00	4.90	4.32	0.00				
78.00	4.90	4.32	0.00				
80.00	4.90	4.32	0.00				
82.00	4.90	4.32	0.00				
84.00	4.90	4.32	0.00				
86.00	4.90	4.32	0.00				
88.00	4.90	4.32	0.00				
90.00	4.90	4.32	0.00				
92.00	4.90	4.32	0.00				
94.00	4.90	4.32	0.00				
96.00	4.90	4.32	0.00				
98.00	4.90	4.32	0.00				
100.00	4.90	4.32	0.00				
102.00	4.90	4.32	0.00				

Subcatchment 2E: Disturbed Unmanaged

Hydrograph

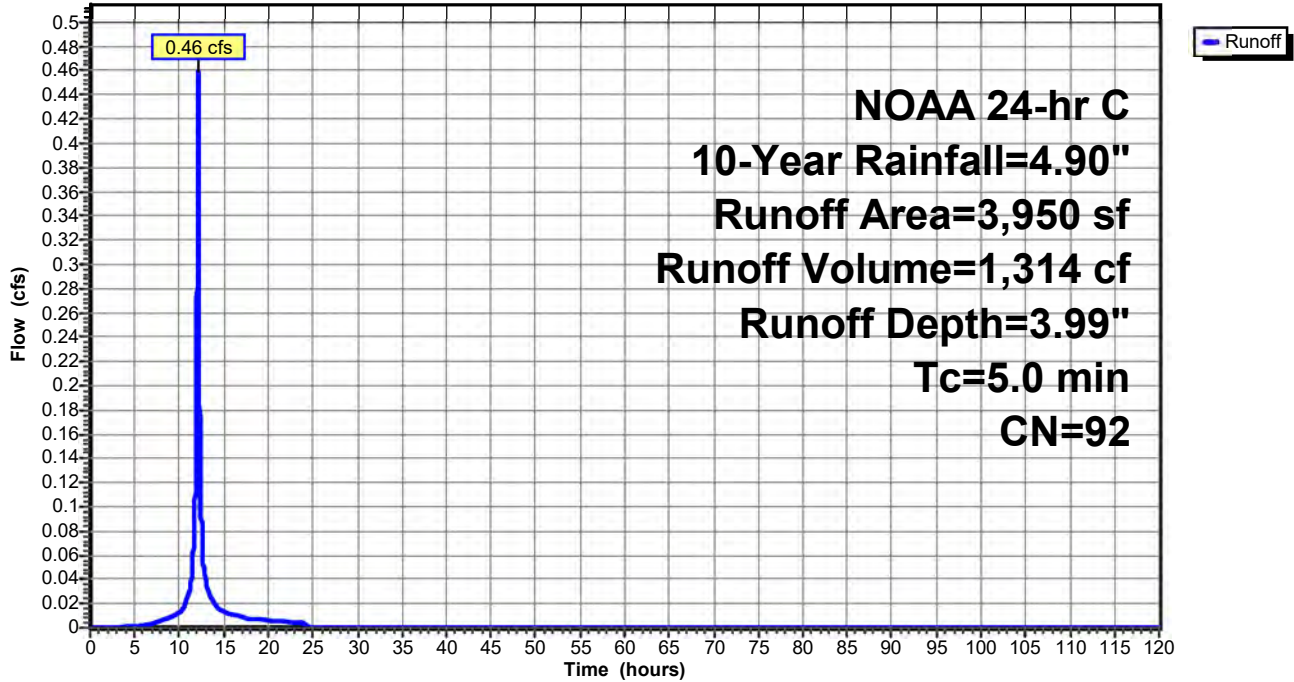


**Hydrograph for Subcatchment 2E: Disturbed Unmanaged**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	4.90	4.10	0.00
2.00	0.11	0.00	0.00	106.00	4.90	4.10	0.00
4.00	0.24	0.01	0.00	108.00	4.90	4.10	0.00
6.00	0.39	0.06	0.00	110.00	4.90	4.10	0.00
8.00	0.59	0.16	0.01	112.00	4.90	4.10	0.00
10.00	0.89	0.37	0.01	114.00	4.90	4.10	0.00
12.00	2.34	1.62	<b>0.26</b>	116.00	4.90	4.10	0.00
14.00	4.01	3.23	<b>0.02</b>	118.00	4.90	4.10	0.00
16.00	4.31	3.52	0.01	120.00	4.90	4.10	0.00
18.00	4.51	3.72	0.01				
20.00	4.66	3.86	0.01				
22.00	4.79	3.99	0.01				
24.00	<b>4.90</b>	<b>4.10</b>	0.01				
26.00	4.90	4.10	0.00				
28.00	4.90	4.10	0.00				
30.00	4.90	4.10	0.00				
32.00	4.90	4.10	0.00				
34.00	4.90	4.10	0.00				
36.00	4.90	4.10	0.00				
38.00	4.90	4.10	0.00				
40.00	4.90	4.10	0.00				
42.00	4.90	4.10	0.00				
44.00	4.90	4.10	0.00				
46.00	4.90	4.10	0.00				
48.00	4.90	4.10	0.00				
50.00	4.90	4.10	0.00				
52.00	4.90	4.10	0.00				
54.00	4.90	4.10	0.00				
56.00	4.90	4.10	0.00				
58.00	4.90	4.10	0.00				
60.00	4.90	4.10	0.00				
62.00	4.90	4.10	0.00				
64.00	4.90	4.10	0.00				
66.00	4.90	4.10	0.00				
68.00	4.90	4.10	0.00				
70.00	4.90	4.10	0.00				
72.00	4.90	4.10	0.00				
74.00	4.90	4.10	0.00				
76.00	4.90	4.10	0.00				
78.00	4.90	4.10	0.00				
80.00	4.90	4.10	0.00				
82.00	4.90	4.10	0.00				
84.00	4.90	4.10	0.00				
86.00	4.90	4.10	0.00				
88.00	4.90	4.10	0.00				
90.00	4.90	4.10	0.00				
92.00	4.90	4.10	0.00				
94.00	4.90	4.10	0.00				
96.00	4.90	4.10	0.00				
98.00	4.90	4.10	0.00				
100.00	4.90	4.10	0.00				
102.00	4.90	4.10	0.00				

Subcatchment 2P: Disturbed Unmanaged

Hydrograph

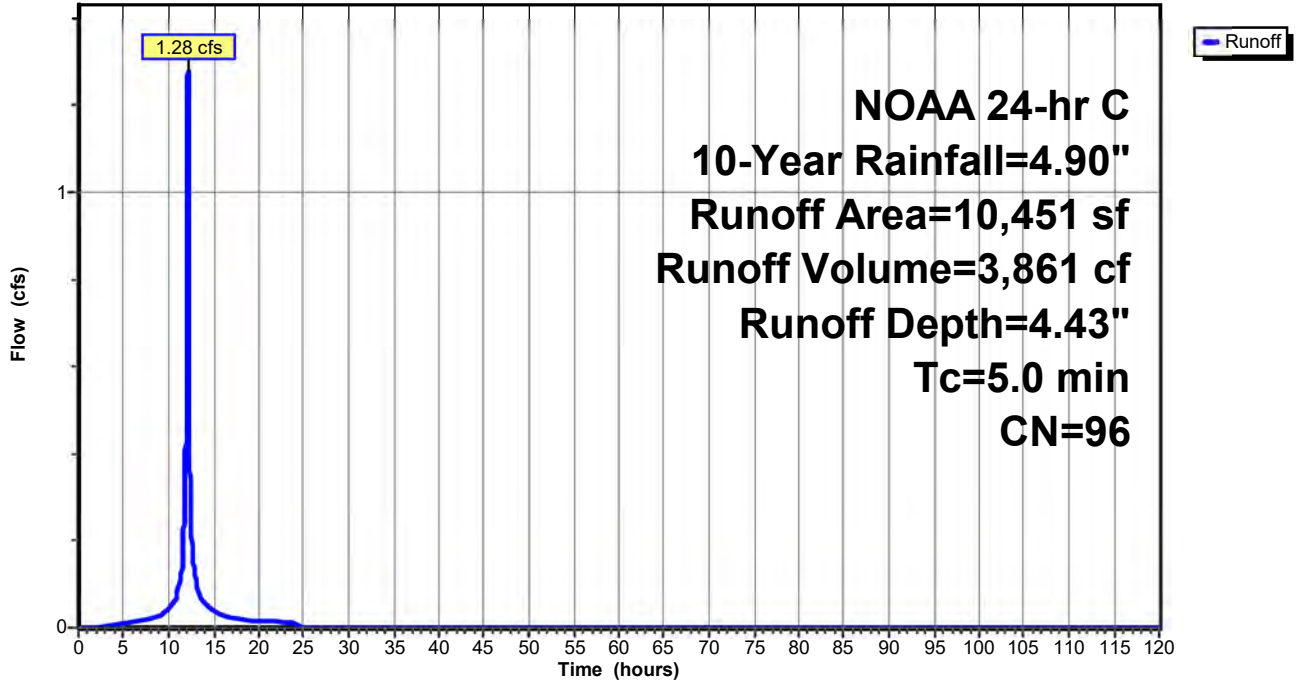


**Hydrograph for Subcatchment 2P: Disturbed Unmanaged**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	4.90	3.99	0.00
2.00	0.11	0.00	0.00	106.00	4.90	3.99	0.00
4.00	0.24	0.00	0.00	108.00	4.90	3.99	0.00
6.00	0.39	0.04	0.00	110.00	4.90	3.99	0.00
8.00	0.59	0.13	0.01	112.00	4.90	3.99	0.00
10.00	0.89	0.33	0.01	114.00	4.90	3.99	0.00
12.00	2.34	1.54	<b>0.26</b>	116.00	4.90	3.99	0.00
14.00	4.01	3.12	<b>0.02</b>	118.00	4.90	3.99	0.00
16.00	4.31	3.42	0.01	120.00	4.90	3.99	0.00
18.00	4.51	3.61	0.01				
20.00	4.66	3.76	0.01				
22.00	4.79	3.88	0.01				
24.00	<b>4.90</b>	<b>3.99</b>	0.01				
26.00	4.90	3.99	0.00				
28.00	4.90	3.99	0.00				
30.00	4.90	3.99	0.00				
32.00	4.90	3.99	0.00				
34.00	4.90	3.99	0.00				
36.00	4.90	3.99	0.00				
38.00	4.90	3.99	0.00				
40.00	4.90	3.99	0.00				
42.00	4.90	3.99	0.00				
44.00	4.90	3.99	0.00				
46.00	4.90	3.99	0.00				
48.00	4.90	3.99	0.00				
50.00	4.90	3.99	0.00				
52.00	4.90	3.99	0.00				
54.00	4.90	3.99	0.00				
56.00	4.90	3.99	0.00				
58.00	4.90	3.99	0.00				
60.00	4.90	3.99	0.00				
62.00	4.90	3.99	0.00				
64.00	4.90	3.99	0.00				
66.00	4.90	3.99	0.00				
68.00	4.90	3.99	0.00				
70.00	4.90	3.99	0.00				
72.00	4.90	3.99	0.00				
74.00	4.90	3.99	0.00				
76.00	4.90	3.99	0.00				
78.00	4.90	3.99	0.00				
80.00	4.90	3.99	0.00				
82.00	4.90	3.99	0.00				
84.00	4.90	3.99	0.00				
86.00	4.90	3.99	0.00				
88.00	4.90	3.99	0.00				
90.00	4.90	3.99	0.00				
92.00	4.90	3.99	0.00				
94.00	4.90	3.99	0.00				
96.00	4.90	3.99	0.00				
98.00	4.90	3.99	0.00				
100.00	4.90	3.99	0.00				
102.00	4.90	3.99	0.00				

Subcatchment 3E: Undisturbed Managed

Hydrograph

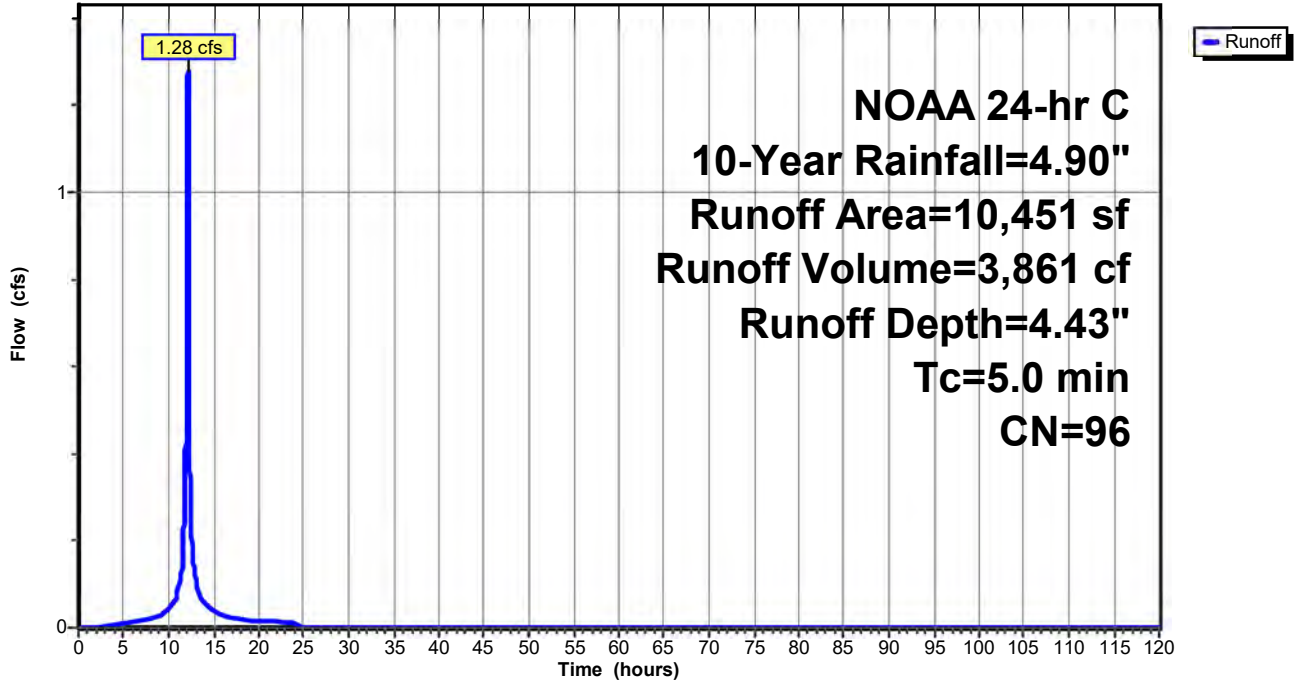


**Hydrograph for Subcatchment 3E: Undisturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	4.90	4.43	0.00
2.00	0.11	0.00	0.00	106.00	4.90	4.43	0.00
4.00	0.24	0.04	0.01	108.00	4.90	4.43	0.00
6.00	0.39	0.13	0.01	110.00	4.90	4.43	0.00
8.00	0.59	0.28	0.02	112.00	4.90	4.43	0.00
10.00	0.89	0.53	0.04	114.00	4.90	4.43	0.00
12.00	2.34	1.90	<b>0.73</b>	116.00	4.90	4.43	0.00
14.00	4.01	3.55	<b>0.05</b>	118.00	4.90	4.43	0.00
16.00	4.31	3.85	0.03	120.00	4.90	4.43	0.00
18.00	4.51	4.05	0.02				
20.00	4.66	4.19	0.02				
22.00	4.79	4.32	0.01				
24.00	<b>4.90</b>	<b>4.43</b>	0.01				
26.00	4.90	4.43	0.00				
28.00	4.90	4.43	0.00				
30.00	4.90	4.43	0.00				
32.00	4.90	4.43	0.00				
34.00	4.90	4.43	0.00				
36.00	4.90	4.43	0.00				
38.00	4.90	4.43	0.00				
40.00	4.90	4.43	0.00				
42.00	4.90	4.43	0.00				
44.00	4.90	4.43	0.00				
46.00	4.90	4.43	0.00				
48.00	4.90	4.43	0.00				
50.00	4.90	4.43	0.00				
52.00	4.90	4.43	0.00				
54.00	4.90	4.43	0.00				
56.00	4.90	4.43	0.00				
58.00	4.90	4.43	0.00				
60.00	4.90	4.43	0.00				
62.00	4.90	4.43	0.00				
64.00	4.90	4.43	0.00				
66.00	4.90	4.43	0.00				
68.00	4.90	4.43	0.00				
70.00	4.90	4.43	0.00				
72.00	4.90	4.43	0.00				
74.00	4.90	4.43	0.00				
76.00	4.90	4.43	0.00				
78.00	4.90	4.43	0.00				
80.00	4.90	4.43	0.00				
82.00	4.90	4.43	0.00				
84.00	4.90	4.43	0.00				
86.00	4.90	4.43	0.00				
88.00	4.90	4.43	0.00				
90.00	4.90	4.43	0.00				
92.00	4.90	4.43	0.00				
94.00	4.90	4.43	0.00				
96.00	4.90	4.43	0.00				
98.00	4.90	4.43	0.00				
100.00	4.90	4.43	0.00				
102.00	4.90	4.43	0.00				

Subcatchment 3P: Undisturbed Managed

Hydrograph

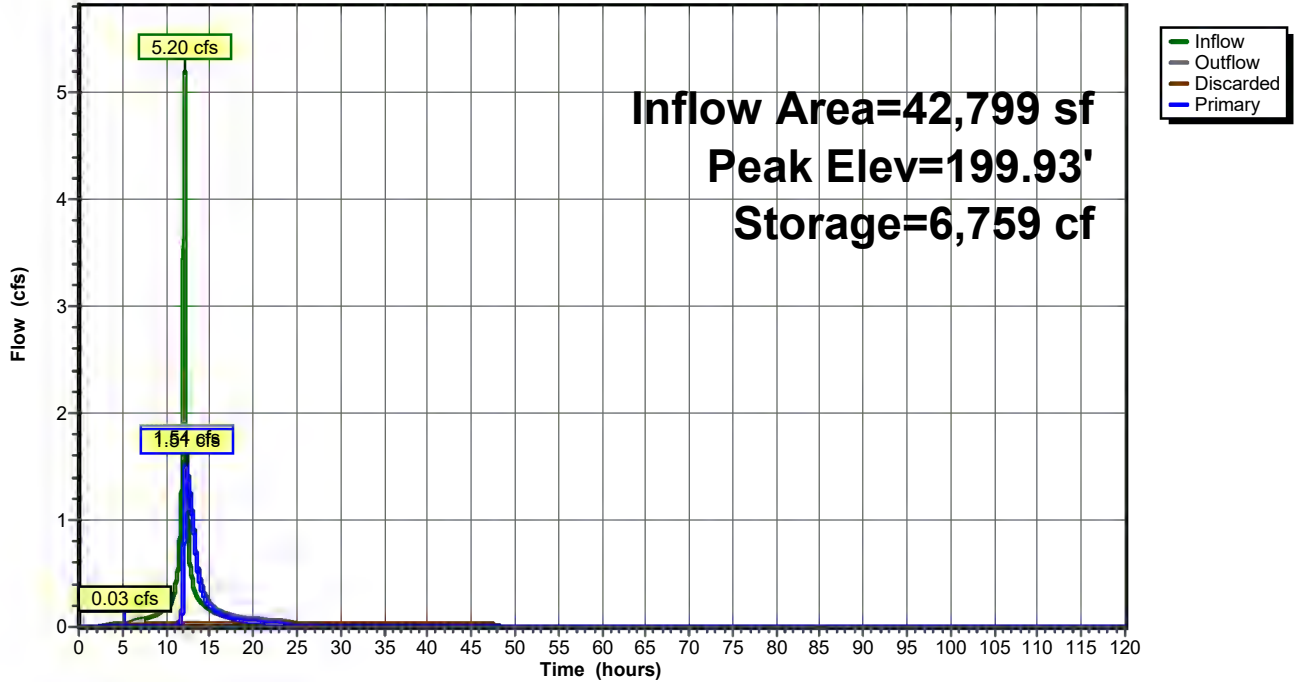


**Hydrograph for Subcatchment 3P: Undisturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	4.90	4.43	0.00
2.00	0.11	0.00	0.00	106.00	4.90	4.43	0.00
4.00	0.24	0.04	0.01	108.00	4.90	4.43	0.00
6.00	0.39	0.13	0.01	110.00	4.90	4.43	0.00
8.00	0.59	0.28	0.02	112.00	4.90	4.43	0.00
10.00	0.89	0.53	0.04	114.00	4.90	4.43	0.00
12.00	2.34	1.90	<b>0.73</b>	116.00	4.90	4.43	0.00
14.00	4.01	3.55	<b>0.05</b>	118.00	4.90	4.43	0.00
16.00	4.31	3.85	0.03	120.00	4.90	4.43	0.00
18.00	4.51	4.05	0.02				
20.00	4.66	4.19	0.02				
22.00	4.79	4.32	0.01				
24.00	<b>4.90</b>	<b>4.43</b>	0.01				
26.00	4.90	4.43	0.00				
28.00	4.90	4.43	0.00				
30.00	4.90	4.43	0.00				
32.00	4.90	4.43	0.00				
34.00	4.90	4.43	0.00				
36.00	4.90	4.43	0.00				
38.00	4.90	4.43	0.00				
40.00	4.90	4.43	0.00				
42.00	4.90	4.43	0.00				
44.00	4.90	4.43	0.00				
46.00	4.90	4.43	0.00				
48.00	4.90	4.43	0.00				
50.00	4.90	4.43	0.00				
52.00	4.90	4.43	0.00				
54.00	4.90	4.43	0.00				
56.00	4.90	4.43	0.00				
58.00	4.90	4.43	0.00				
60.00	4.90	4.43	0.00				
62.00	4.90	4.43	0.00				
64.00	4.90	4.43	0.00				
66.00	4.90	4.43	0.00				
68.00	4.90	4.43	0.00				
70.00	4.90	4.43	0.00				
72.00	4.90	4.43	0.00				
74.00	4.90	4.43	0.00				
76.00	4.90	4.43	0.00				
78.00	4.90	4.43	0.00				
80.00	4.90	4.43	0.00				
82.00	4.90	4.43	0.00				
84.00	4.90	4.43	0.00				
86.00	4.90	4.43	0.00				
88.00	4.90	4.43	0.00				
90.00	4.90	4.43	0.00				
92.00	4.90	4.43	0.00				
94.00	4.90	4.43	0.00				
96.00	4.90	4.43	0.00				
98.00	4.90	4.43	0.00				
100.00	4.90	4.43	0.00				
102.00	4.90	4.43	0.00				

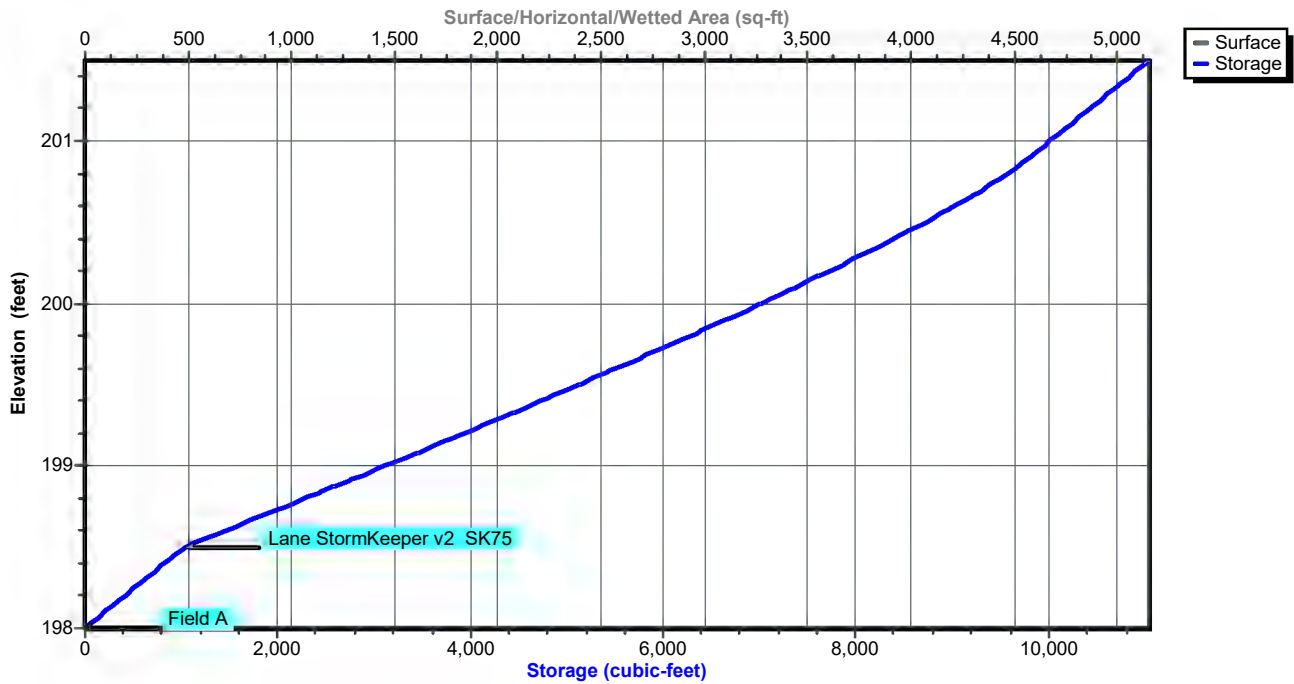
### Pond 5P: Short - Stormkeeper Chamber

Hydrograph



### Pond 5P: Short - Stormkeeper Chamber

Stage-Area-Storage



**Hydrograph for Pond 5P: Short - Stormkeeper Chamber**

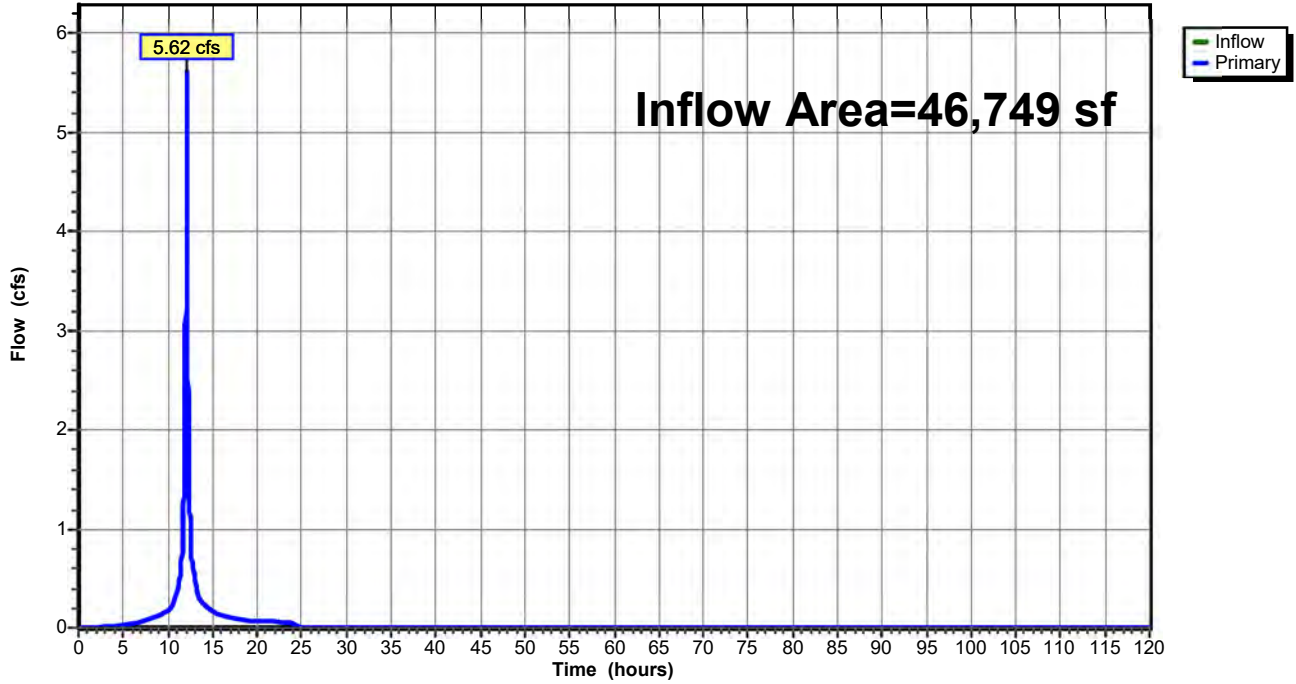
Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	198.00	0.00	0.00	0.00
5.00	0.04	65	198.03	0.03	<b>0.03</b>	0.00
10.00	<b>0.18</b>	<b>940</b>	<b>198.46</b>	<b>0.03</b>	<b>0.03</b>	<b>0.00</b>
15.00	<b>0.14</b>	<b>3,572</b>	<b>199.11</b>	<b>0.23</b>	0.03	<b>0.19</b>
20.00	0.07	3,049	198.98	0.08	0.03	0.05
25.00	0.00	2,760	198.91	0.04	0.03	0.01
30.00	0.00	2,144	198.77	0.03	0.03	0.00
35.00	0.00	1,543	198.62	0.03	0.03	0.00
40.00	0.00	942	198.46	0.03	0.03	0.00
45.00	0.00	341	198.17	0.03	0.03	0.00
50.00	0.00	1	198.00	0.00	0.00	0.00
55.00	0.00	0	198.00	0.00	0.00	0.00
60.00	0.00	0	198.00	0.00	0.00	0.00
65.00	0.00	0	198.00	0.00	0.00	0.00
70.00	0.00	0	198.00	0.00	0.00	0.00
75.00	0.00	0	198.00	0.00	0.00	0.00
80.00	0.00	0	198.00	0.00	0.00	0.00
85.00	0.00	0	198.00	0.00	0.00	0.00
90.00	0.00	0	198.00	0.00	0.00	0.00
95.00	0.00	0	198.00	0.00	0.00	0.00
100.00	0.00	0	198.00	0.00	0.00	0.00
105.00	0.00	0	198.00	0.00	0.00	0.00
110.00	0.00	0	198.00	0.00	0.00	0.00
115.00	0.00	0	198.00	0.00	0.00	0.00
120.00	0.00	0	198.00	0.00	0.00	0.00

**Stage-Area-Storage for Pond 5P: Short - Stormkeeper Chamber**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
198.00	5,154	0	200.60	5,154	9,027
198.05	5,154	103	200.65	5,154	9,173
198.10	5,154	206	200.70	5,154	9,312
198.15	5,154	309	200.75	5,154	9,444
198.20	5,154	412	200.80	5,154	9,569
198.25	5,154	515	200.85	5,154	9,688
198.30	5,154	618	200.90	5,154	9,802
198.35	5,154	722	200.95	5,154	9,910
198.40	5,154	825	201.00	5,154	10,015
198.45	5,154	928	201.05	5,154	10,118
198.50	5,154	1,031	201.10	5,154	10,221
198.55	5,154	1,242	201.15	5,154	10,324
198.60	5,154	1,452	201.20	5,154	10,427
198.65	5,154	1,662	201.25	5,154	10,530
198.70	5,154	1,872	201.30	5,154	10,633
198.75	5,154	2,080	201.35	5,154	10,736
198.80	5,154	2,289	201.40	5,154	10,839
198.85	5,154	2,496	201.45	5,154	10,943
198.90	5,154	2,703	201.50	5,154	11,046
198.95	5,154	2,909			
199.00	5,154	3,114			
199.05	5,154	3,319			
199.10	5,154	3,523			
199.15	5,154	3,726			
199.20	5,154	3,928			
199.25	5,154	4,129			
199.30	5,154	4,329			
199.35	5,154	4,528			
199.40	5,154	4,727			
199.45	5,154	4,924			
199.50	5,154	5,120			
199.55	5,154	5,315			
199.60	5,154	5,509			
199.65	5,154	5,702			
199.70	5,154	5,894			
199.75	5,154	6,084			
199.80	5,154	6,273			
199.85	5,154	6,460			
199.90	5,154	6,646			
199.95	5,154	6,830			
200.00	5,154	7,012			
200.05	5,154	7,193			
200.10	5,154	7,372			
200.15	5,154	7,549			
200.20	5,154	7,724			
200.25	5,154	7,896			
200.30	5,154	8,067			
200.35	5,154	8,235			
200.40	5,154	8,400			
200.45	5,154	8,562			
200.50	5,154	8,721			
200.55	5,154	8,876			

### Pond E: POA-1-E

Hydrograph

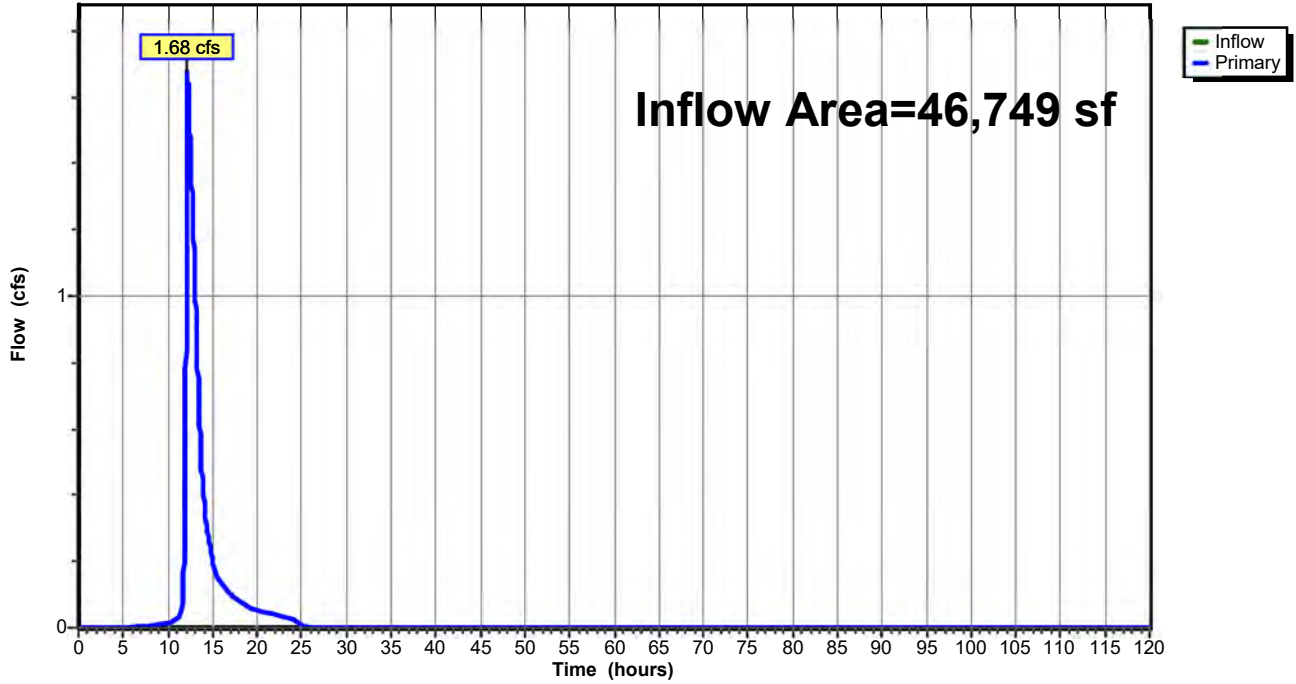


**Hydrograph for Pond E: POA-1-E**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	104.00	0.00		0.00
2.00	0.00		0.00	106.00	0.00		0.00
4.00	0.02		0.02	108.00	0.00		0.00
6.00	0.04		0.04	110.00	0.00		0.00
8.00	0.09		0.09	112.00	0.00		0.00
10.00	0.18		0.18	114.00	0.00		0.00
12.00	<b>3.19</b>		<b>3.19</b>	116.00	0.00		0.00
14.00	<b>0.23</b>		<b>0.23</b>	118.00	0.00		0.00
16.00	0.13		0.13	120.00	0.00		0.00
18.00	0.09		0.09				
20.00	0.07		0.07				
22.00	0.06		0.06				
24.00	0.06		0.06				
26.00	0.00		0.00				
28.00	0.00		0.00				
30.00	0.00		0.00				
32.00	0.00		0.00				
34.00	0.00		0.00				
36.00	0.00		0.00				
38.00	0.00		0.00				
40.00	0.00		0.00				
42.00	0.00		0.00				
44.00	0.00		0.00				
46.00	0.00		0.00				
48.00	0.00		0.00				
50.00	0.00		0.00				
52.00	0.00		0.00				
54.00	0.00		0.00				
56.00	0.00		0.00				
58.00	0.00		0.00				
60.00	0.00		0.00				
62.00	0.00		0.00				
64.00	0.00		0.00				
66.00	0.00		0.00				
68.00	0.00		0.00				
70.00	0.00		0.00				
72.00	0.00		0.00				
74.00	0.00		0.00				
76.00	0.00		0.00				
78.00	0.00		0.00				
80.00	0.00		0.00				
82.00	0.00		0.00				
84.00	0.00		0.00				
86.00	0.00		0.00				
88.00	0.00		0.00				
90.00	0.00		0.00				
92.00	0.00		0.00				
94.00	0.00		0.00				
96.00	0.00		0.00				
98.00	0.00		0.00				
100.00	0.00		0.00				
102.00	0.00		0.00				

### Pond P: POA-1-P

Hydrograph

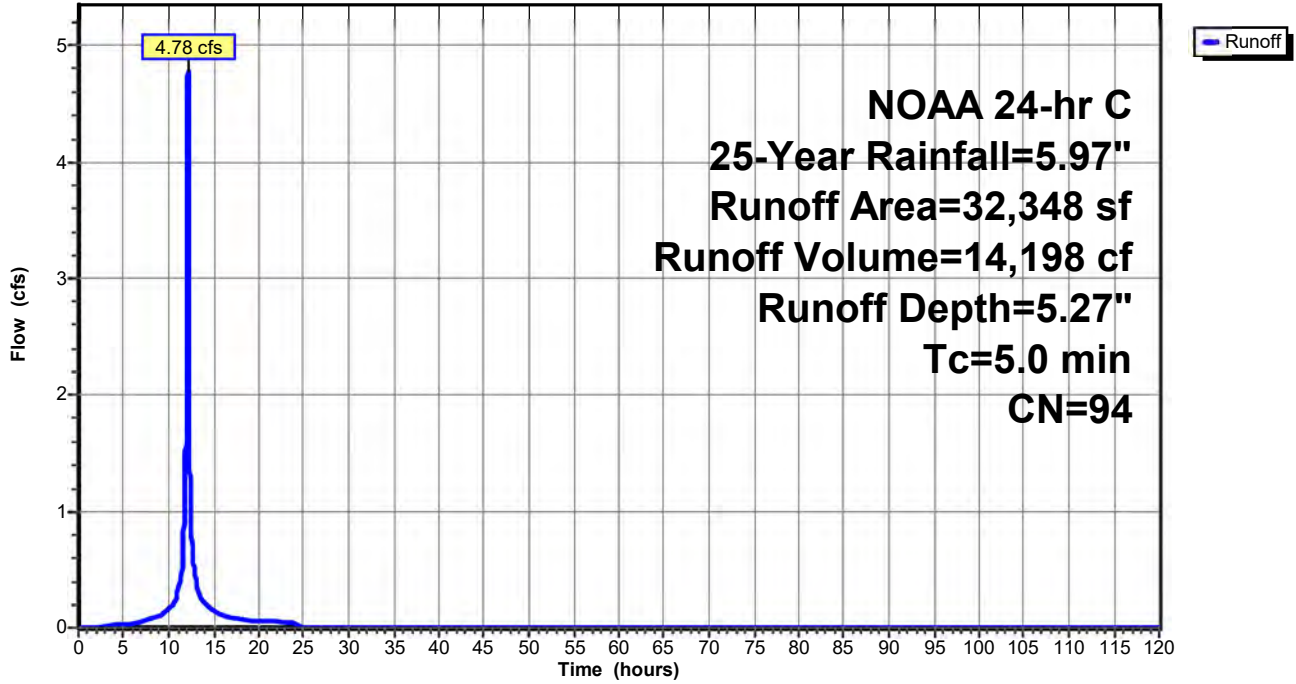


**Hydrograph for Pond P: POA-1-P**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	104.00	0.00		0.00
2.00	0.00		0.00	106.00	0.00		0.00
4.00	0.00		0.00	108.00	0.00		0.00
6.00	0.00		0.00	110.00	0.00		0.00
8.00	0.01		0.01	112.00	0.00		0.00
10.00	0.01		0.01	114.00	0.00		0.00
12.00	<b>0.83</b>		<b>0.83</b>	116.00	0.00		0.00
14.00	<b>0.39</b>		<b>0.39</b>	118.00	0.00		0.00
16.00	0.13		0.13	120.00	0.00		0.00
18.00	0.08		0.08				
20.00	0.05		0.05				
22.00	0.04		0.04				
24.00	0.03		0.03				
26.00	0.00		0.00				
28.00	0.00		0.00				
30.00	0.00		0.00				
32.00	0.00		0.00				
34.00	0.00		0.00				
36.00	0.00		0.00				
38.00	0.00		0.00				
40.00	0.00		0.00				
42.00	0.00		0.00				
44.00	0.00		0.00				
46.00	0.00		0.00				
48.00	0.00		0.00				
50.00	0.00		0.00				
52.00	0.00		0.00				
54.00	0.00		0.00				
56.00	0.00		0.00				
58.00	0.00		0.00				
60.00	0.00		0.00				
62.00	0.00		0.00				
64.00	0.00		0.00				
66.00	0.00		0.00				
68.00	0.00		0.00				
70.00	0.00		0.00				
72.00	0.00		0.00				
74.00	0.00		0.00				
76.00	0.00		0.00				
78.00	0.00		0.00				
80.00	0.00		0.00				
82.00	0.00		0.00				
84.00	0.00		0.00				
86.00	0.00		0.00				
88.00	0.00		0.00				
90.00	0.00		0.00				
92.00	0.00		0.00				
94.00	0.00		0.00				
96.00	0.00		0.00				
98.00	0.00		0.00				
100.00	0.00		0.00				
102.00	0.00		0.00				

### Subcatchment 1E: Disturbed Managed

Hydrograph

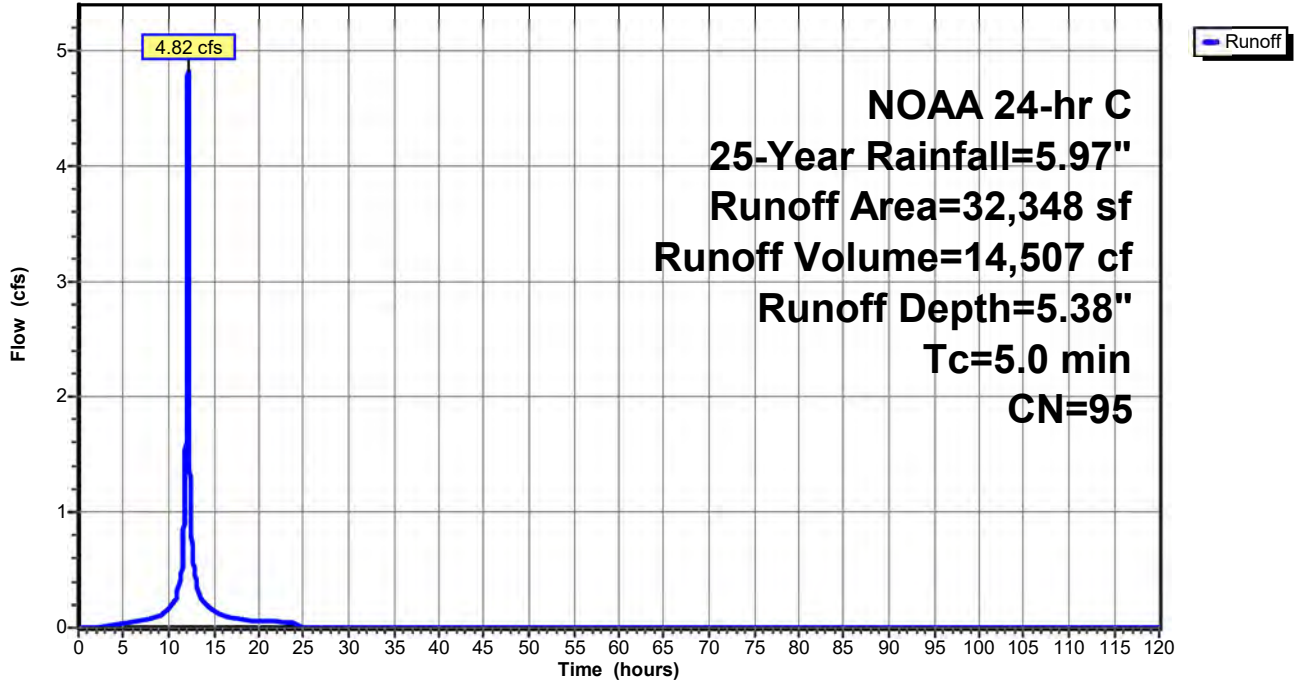


**Hydrograph for Subcatchment 1E: Disturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	5.97	5.27	0.00
2.00	0.13	0.00	0.00	106.00	5.97	5.27	0.00
4.00	0.29	0.03	0.02	108.00	5.97	5.27	0.00
6.00	0.47	0.12	0.04	110.00	5.97	5.27	0.00
8.00	0.72	0.28	0.08	112.00	5.97	5.27	0.00
10.00	1.09	0.58	0.16	114.00	5.97	5.27	0.00
12.00	2.85	2.20	<b>2.72</b>	116.00	5.97	5.27	0.00
14.00	4.88	4.19	<b>0.20</b>	118.00	5.97	5.27	0.00
16.00	5.25	4.56	0.11	120.00	5.97	5.27	0.00
18.00	5.50	4.80	0.07				
20.00	5.68	4.98	0.06				
22.00	5.84	5.13	0.05				
24.00	<b>5.97</b>	<b>5.27</b>	0.05				
26.00	5.97	5.27	0.00				
28.00	5.97	5.27	0.00				
30.00	5.97	5.27	0.00				
32.00	5.97	5.27	0.00				
34.00	5.97	5.27	0.00				
36.00	5.97	5.27	0.00				
38.00	5.97	5.27	0.00				
40.00	5.97	5.27	0.00				
42.00	5.97	5.27	0.00				
44.00	5.97	5.27	0.00				
46.00	5.97	5.27	0.00				
48.00	5.97	5.27	0.00				
50.00	5.97	5.27	0.00				
52.00	5.97	5.27	0.00				
54.00	5.97	5.27	0.00				
56.00	5.97	5.27	0.00				
58.00	5.97	5.27	0.00				
60.00	5.97	5.27	0.00				
62.00	5.97	5.27	0.00				
64.00	5.97	5.27	0.00				
66.00	5.97	5.27	0.00				
68.00	5.97	5.27	0.00				
70.00	5.97	5.27	0.00				
72.00	5.97	5.27	0.00				
74.00	5.97	5.27	0.00				
76.00	5.97	5.27	0.00				
78.00	5.97	5.27	0.00				
80.00	5.97	5.27	0.00				
82.00	5.97	5.27	0.00				
84.00	5.97	5.27	0.00				
86.00	5.97	5.27	0.00				
88.00	5.97	5.27	0.00				
90.00	5.97	5.27	0.00				
92.00	5.97	5.27	0.00				
94.00	5.97	5.27	0.00				
96.00	5.97	5.27	0.00				
98.00	5.97	5.27	0.00				
100.00	5.97	5.27	0.00				
102.00	5.97	5.27	0.00				

### Subcatchment 1P: Disturbed Managed

Hydrograph

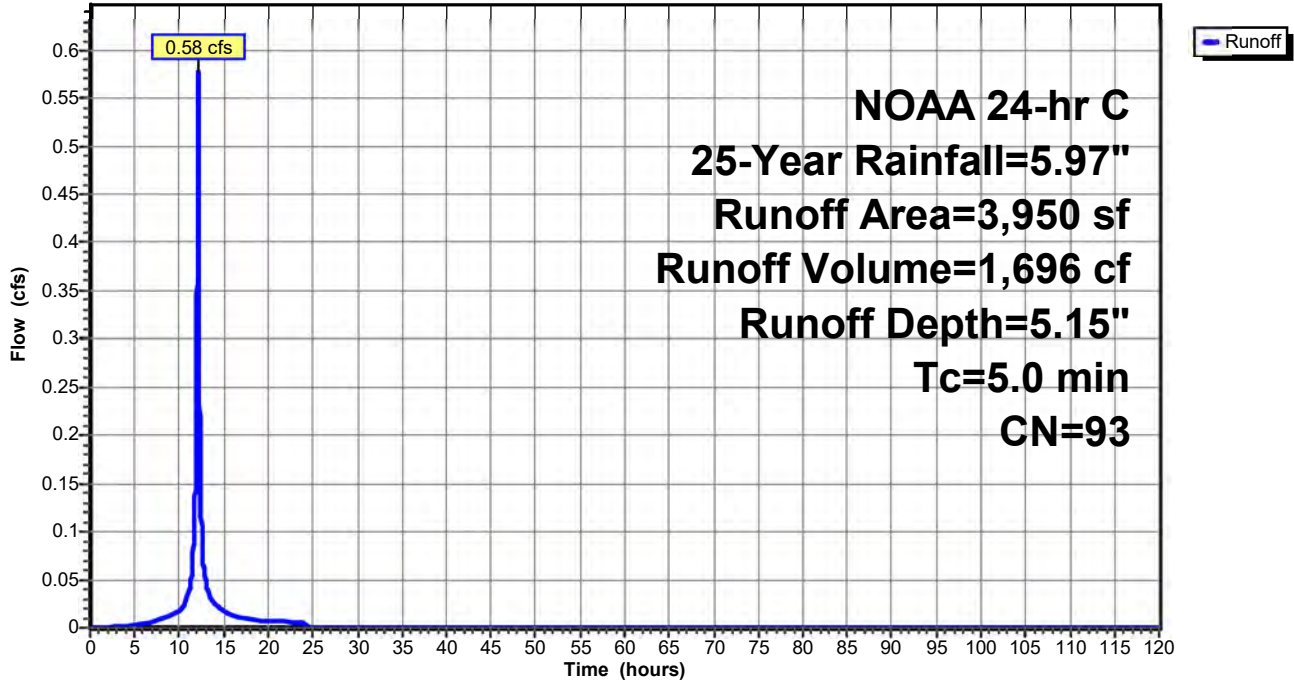


**Hydrograph for Subcatchment 1P: Disturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	5.97	5.38	0.00
2.00	0.13	0.00	0.00	106.00	5.97	5.38	0.00
4.00	0.29	0.05	0.03	108.00	5.97	5.38	0.00
6.00	0.47	0.15	0.05	110.00	5.97	5.38	0.00
8.00	0.72	0.33	0.08	112.00	5.97	5.38	0.00
10.00	1.09	0.64	0.17	114.00	5.97	5.38	0.00
12.00	2.85	2.30	<b>2.75</b>	116.00	5.97	5.38	0.00
14.00	4.88	4.30	<b>0.20</b>	118.00	5.97	5.38	0.00
16.00	5.25	4.67	0.11	120.00	5.97	5.38	0.00
18.00	5.50	4.91	0.07				
20.00	5.68	5.09	0.06				
22.00	5.84	5.25	0.05				
24.00	<b>5.97</b>	<b>5.38</b>	0.05				
26.00	5.97	5.38	0.00				
28.00	5.97	5.38	0.00				
30.00	5.97	5.38	0.00				
32.00	5.97	5.38	0.00				
34.00	5.97	5.38	0.00				
36.00	5.97	5.38	0.00				
38.00	5.97	5.38	0.00				
40.00	5.97	5.38	0.00				
42.00	5.97	5.38	0.00				
44.00	5.97	5.38	0.00				
46.00	5.97	5.38	0.00				
48.00	5.97	5.38	0.00				
50.00	5.97	5.38	0.00				
52.00	5.97	5.38	0.00				
54.00	5.97	5.38	0.00				
56.00	5.97	5.38	0.00				
58.00	5.97	5.38	0.00				
60.00	5.97	5.38	0.00				
62.00	5.97	5.38	0.00				
64.00	5.97	5.38	0.00				
66.00	5.97	5.38	0.00				
68.00	5.97	5.38	0.00				
70.00	5.97	5.38	0.00				
72.00	5.97	5.38	0.00				
74.00	5.97	5.38	0.00				
76.00	5.97	5.38	0.00				
78.00	5.97	5.38	0.00				
80.00	5.97	5.38	0.00				
82.00	5.97	5.38	0.00				
84.00	5.97	5.38	0.00				
86.00	5.97	5.38	0.00				
88.00	5.97	5.38	0.00				
90.00	5.97	5.38	0.00				
92.00	5.97	5.38	0.00				
94.00	5.97	5.38	0.00				
96.00	5.97	5.38	0.00				
98.00	5.97	5.38	0.00				
100.00	5.97	5.38	0.00				
102.00	5.97	5.38	0.00				

Subcatchment 2E: Disturbed Unmanaged

Hydrograph

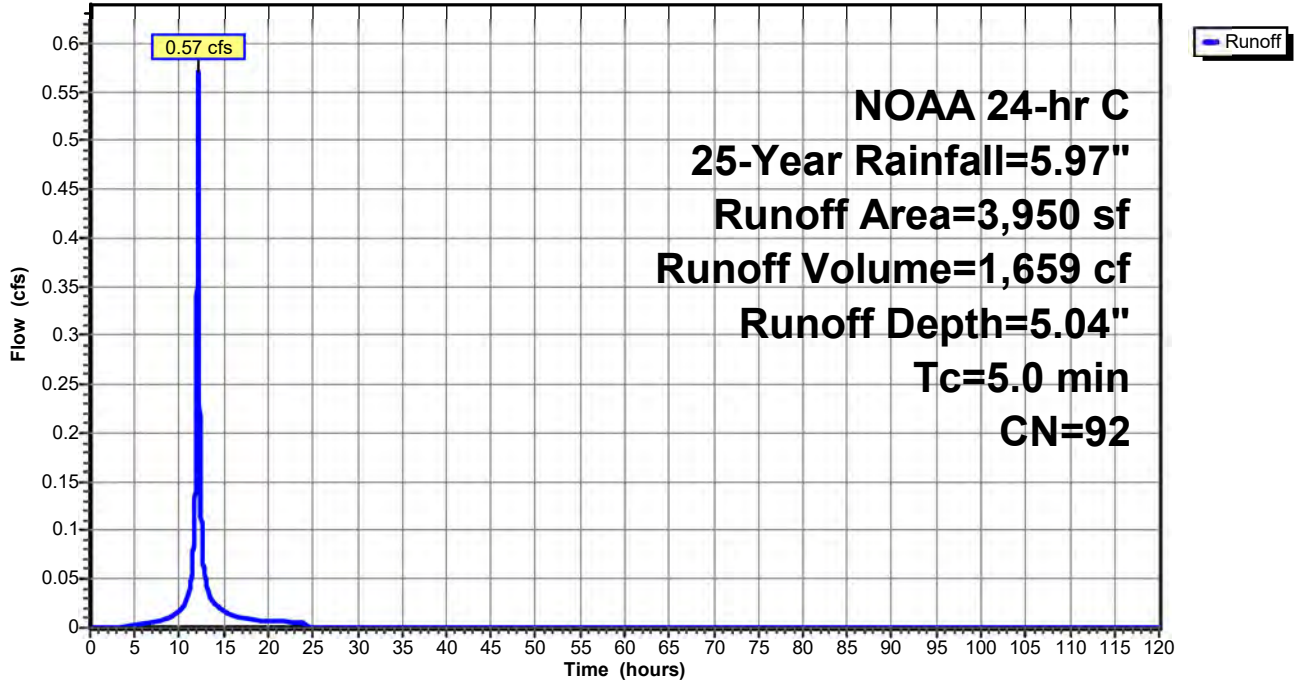


**Hydrograph for Subcatchment 2E: Disturbed Unmanaged**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	5.97	5.15	0.00
2.00	0.13	0.00	0.00	106.00	5.97	5.15	0.00
4.00	0.29	0.02	0.00	108.00	5.97	5.15	0.00
6.00	0.47	0.10	0.00	110.00	5.97	5.15	0.00
8.00	0.72	0.24	0.01	112.00	5.97	5.15	0.00
10.00	1.09	0.52	0.02	114.00	5.97	5.15	0.00
12.00	2.85	2.11	<b>0.33</b>	116.00	5.97	5.15	0.00
14.00	4.88	4.08	<b>0.02</b>	118.00	5.97	5.15	0.00
16.00	5.25	4.45	0.01	120.00	5.97	5.15	0.00
18.00	5.50	4.69	0.01				
20.00	5.68	4.86	0.01				
22.00	5.84	5.02	0.01				
24.00	<b>5.97</b>	<b>5.15</b>	0.01				
26.00	5.97	5.15	0.00				
28.00	5.97	5.15	0.00				
30.00	5.97	5.15	0.00				
32.00	5.97	5.15	0.00				
34.00	5.97	5.15	0.00				
36.00	5.97	5.15	0.00				
38.00	5.97	5.15	0.00				
40.00	5.97	5.15	0.00				
42.00	5.97	5.15	0.00				
44.00	5.97	5.15	0.00				
46.00	5.97	5.15	0.00				
48.00	5.97	5.15	0.00				
50.00	5.97	5.15	0.00				
52.00	5.97	5.15	0.00				
54.00	5.97	5.15	0.00				
56.00	5.97	5.15	0.00				
58.00	5.97	5.15	0.00				
60.00	5.97	5.15	0.00				
62.00	5.97	5.15	0.00				
64.00	5.97	5.15	0.00				
66.00	5.97	5.15	0.00				
68.00	5.97	5.15	0.00				
70.00	5.97	5.15	0.00				
72.00	5.97	5.15	0.00				
74.00	5.97	5.15	0.00				
76.00	5.97	5.15	0.00				
78.00	5.97	5.15	0.00				
80.00	5.97	5.15	0.00				
82.00	5.97	5.15	0.00				
84.00	5.97	5.15	0.00				
86.00	5.97	5.15	0.00				
88.00	5.97	5.15	0.00				
90.00	5.97	5.15	0.00				
92.00	5.97	5.15	0.00				
94.00	5.97	5.15	0.00				
96.00	5.97	5.15	0.00				
98.00	5.97	5.15	0.00				
100.00	5.97	5.15	0.00				
102.00	5.97	5.15	0.00				

Subcatchment 2P: Disturbed Unmanaged

Hydrograph

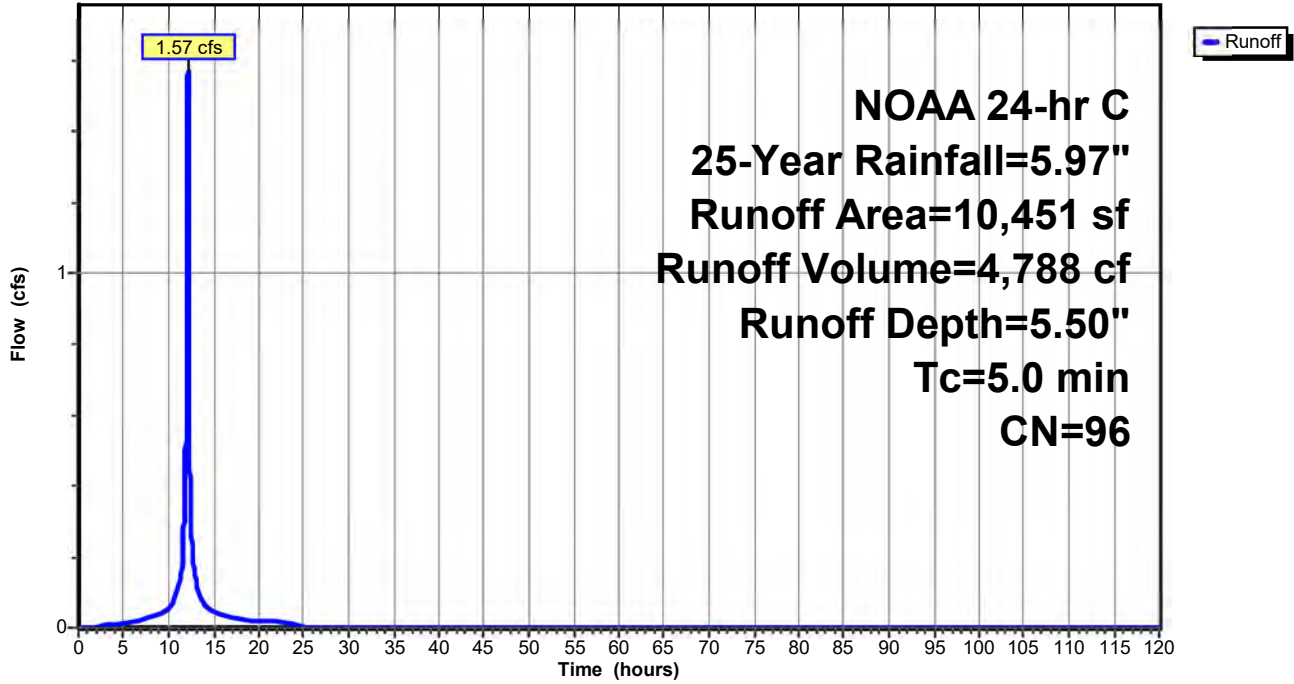


**Hydrograph for Subcatchment 2P: Disturbed Unmanaged**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	5.97	5.04	0.00
2.00	0.13	0.00	0.00	106.00	5.97	5.04	0.00
4.00	0.29	0.01	0.00	108.00	5.97	5.04	0.00
6.00	0.47	0.08	0.00	110.00	5.97	5.04	0.00
8.00	0.72	0.21	0.01	112.00	5.97	5.04	0.00
10.00	1.09	0.47	0.02	114.00	5.97	5.04	0.00
12.00	2.85	2.02	<b>0.32</b>	116.00	5.97	5.04	0.00
14.00	4.88	3.97	<b>0.02</b>	118.00	5.97	5.04	0.00
16.00	5.25	4.34	0.01	120.00	5.97	5.04	0.00
18.00	5.50	4.58	0.01				
20.00	5.68	4.75	0.01				
22.00	5.84	4.91	0.01				
24.00	<b>5.97</b>	<b>5.04</b>	0.01				
26.00	5.97	5.04	0.00				
28.00	5.97	5.04	0.00				
30.00	5.97	5.04	0.00				
32.00	5.97	5.04	0.00				
34.00	5.97	5.04	0.00				
36.00	5.97	5.04	0.00				
38.00	5.97	5.04	0.00				
40.00	5.97	5.04	0.00				
42.00	5.97	5.04	0.00				
44.00	5.97	5.04	0.00				
46.00	5.97	5.04	0.00				
48.00	5.97	5.04	0.00				
50.00	5.97	5.04	0.00				
52.00	5.97	5.04	0.00				
54.00	5.97	5.04	0.00				
56.00	5.97	5.04	0.00				
58.00	5.97	5.04	0.00				
60.00	5.97	5.04	0.00				
62.00	5.97	5.04	0.00				
64.00	5.97	5.04	0.00				
66.00	5.97	5.04	0.00				
68.00	5.97	5.04	0.00				
70.00	5.97	5.04	0.00				
72.00	5.97	5.04	0.00				
74.00	5.97	5.04	0.00				
76.00	5.97	5.04	0.00				
78.00	5.97	5.04	0.00				
80.00	5.97	5.04	0.00				
82.00	5.97	5.04	0.00				
84.00	5.97	5.04	0.00				
86.00	5.97	5.04	0.00				
88.00	5.97	5.04	0.00				
90.00	5.97	5.04	0.00				
92.00	5.97	5.04	0.00				
94.00	5.97	5.04	0.00				
96.00	5.97	5.04	0.00				
98.00	5.97	5.04	0.00				
100.00	5.97	5.04	0.00				
102.00	5.97	5.04	0.00				

Subcatchment 3E: Undisturbed Managed

Hydrograph

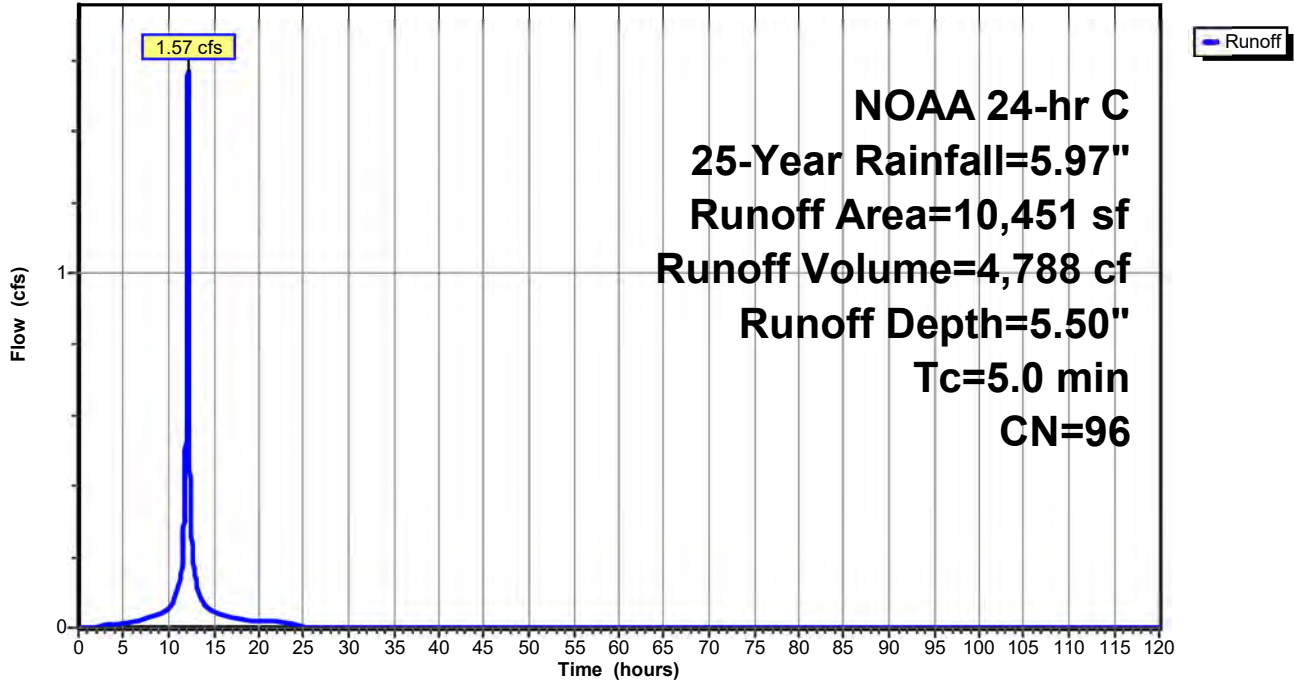


**Hydrograph for Subcatchment 3E: Undisturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	5.97	5.50	0.00
2.00	0.13	0.01	0.00	106.00	5.97	5.50	0.00
4.00	0.29	0.07	0.01	108.00	5.97	5.50	0.00
6.00	0.47	0.19	0.02	110.00	5.97	5.50	0.00
8.00	0.72	0.38	0.03	112.00	5.97	5.50	0.00
10.00	1.09	0.71	0.06	114.00	5.97	5.50	0.00
12.00	2.85	2.40	<b>0.90</b>	116.00	5.97	5.50	0.00
14.00	4.88	4.41	<b>0.06</b>	118.00	5.97	5.50	0.00
16.00	5.25	4.79	0.04	120.00	5.97	5.50	0.00
18.00	5.50	5.03	0.02				
20.00	5.68	5.21	0.02				
22.00	5.84	5.36	0.02				
24.00	<b>5.97</b>	<b>5.50</b>	0.02				
26.00	5.97	5.50	0.00				
28.00	5.97	5.50	0.00				
30.00	5.97	5.50	0.00				
32.00	5.97	5.50	0.00				
34.00	5.97	5.50	0.00				
36.00	5.97	5.50	0.00				
38.00	5.97	5.50	0.00				
40.00	5.97	5.50	0.00				
42.00	5.97	5.50	0.00				
44.00	5.97	5.50	0.00				
46.00	5.97	5.50	0.00				
48.00	5.97	5.50	0.00				
50.00	5.97	5.50	0.00				
52.00	5.97	5.50	0.00				
54.00	5.97	5.50	0.00				
56.00	5.97	5.50	0.00				
58.00	5.97	5.50	0.00				
60.00	5.97	5.50	0.00				
62.00	5.97	5.50	0.00				
64.00	5.97	5.50	0.00				
66.00	5.97	5.50	0.00				
68.00	5.97	5.50	0.00				
70.00	5.97	5.50	0.00				
72.00	5.97	5.50	0.00				
74.00	5.97	5.50	0.00				
76.00	5.97	5.50	0.00				
78.00	5.97	5.50	0.00				
80.00	5.97	5.50	0.00				
82.00	5.97	5.50	0.00				
84.00	5.97	5.50	0.00				
86.00	5.97	5.50	0.00				
88.00	5.97	5.50	0.00				
90.00	5.97	5.50	0.00				
92.00	5.97	5.50	0.00				
94.00	5.97	5.50	0.00				
96.00	5.97	5.50	0.00				
98.00	5.97	5.50	0.00				
100.00	5.97	5.50	0.00				
102.00	5.97	5.50	0.00				

Subcatchment 3P: Undisturbed Managed

Hydrograph

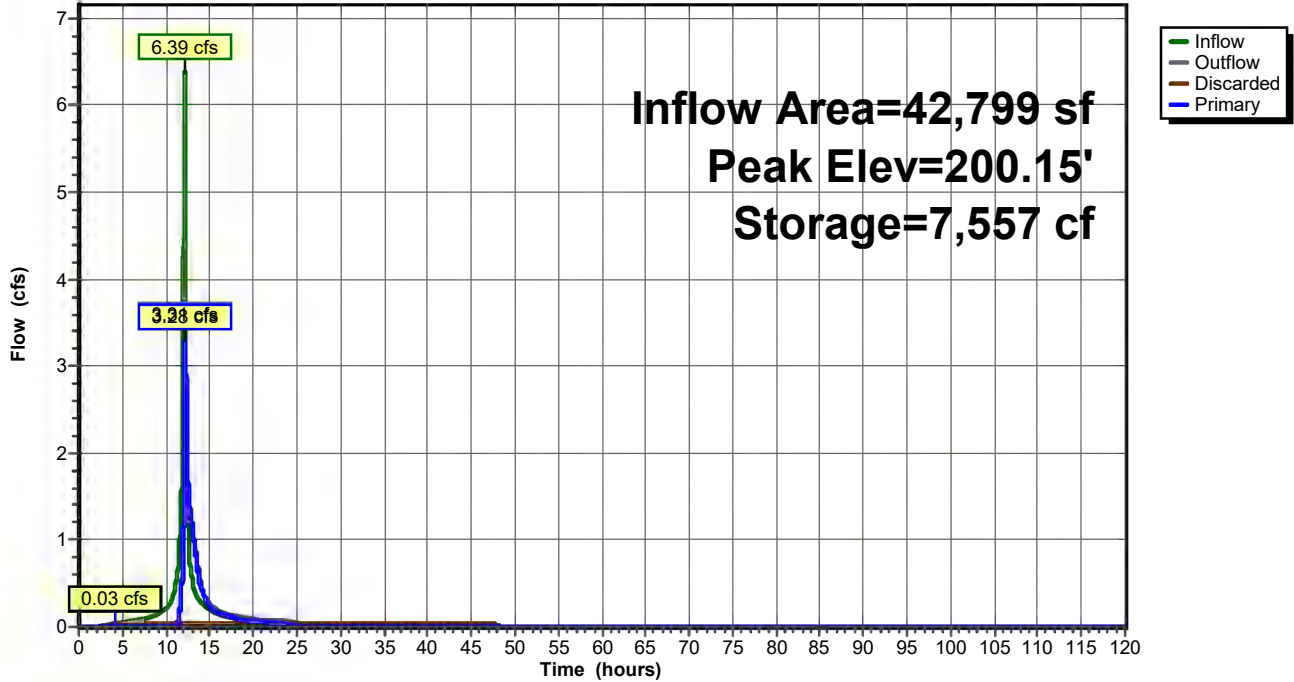


**Hydrograph for Subcatchment 3P: Undisturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	5.97	5.50	0.00
2.00	0.13	0.01	0.00	106.00	5.97	5.50	0.00
4.00	0.29	0.07	0.01	108.00	5.97	5.50	0.00
6.00	0.47	0.19	0.02	110.00	5.97	5.50	0.00
8.00	0.72	0.38	0.03	112.00	5.97	5.50	0.00
10.00	1.09	0.71	0.06	114.00	5.97	5.50	0.00
12.00	2.85	2.40	<b>0.90</b>	116.00	5.97	5.50	0.00
14.00	4.88	4.41	<b>0.06</b>	118.00	5.97	5.50	0.00
16.00	5.25	4.79	0.04	120.00	5.97	5.50	0.00
18.00	5.50	5.03	0.02				
20.00	5.68	5.21	0.02				
22.00	5.84	5.36	0.02				
24.00	<b>5.97</b>	<b>5.50</b>	0.02				
26.00	5.97	5.50	0.00				
28.00	5.97	5.50	0.00				
30.00	5.97	5.50	0.00				
32.00	5.97	5.50	0.00				
34.00	5.97	5.50	0.00				
36.00	5.97	5.50	0.00				
38.00	5.97	5.50	0.00				
40.00	5.97	5.50	0.00				
42.00	5.97	5.50	0.00				
44.00	5.97	5.50	0.00				
46.00	5.97	5.50	0.00				
48.00	5.97	5.50	0.00				
50.00	5.97	5.50	0.00				
52.00	5.97	5.50	0.00				
54.00	5.97	5.50	0.00				
56.00	5.97	5.50	0.00				
58.00	5.97	5.50	0.00				
60.00	5.97	5.50	0.00				
62.00	5.97	5.50	0.00				
64.00	5.97	5.50	0.00				
66.00	5.97	5.50	0.00				
68.00	5.97	5.50	0.00				
70.00	5.97	5.50	0.00				
72.00	5.97	5.50	0.00				
74.00	5.97	5.50	0.00				
76.00	5.97	5.50	0.00				
78.00	5.97	5.50	0.00				
80.00	5.97	5.50	0.00				
82.00	5.97	5.50	0.00				
84.00	5.97	5.50	0.00				
86.00	5.97	5.50	0.00				
88.00	5.97	5.50	0.00				
90.00	5.97	5.50	0.00				
92.00	5.97	5.50	0.00				
94.00	5.97	5.50	0.00				
96.00	5.97	5.50	0.00				
98.00	5.97	5.50	0.00				
100.00	5.97	5.50	0.00				
102.00	5.97	5.50	0.00				

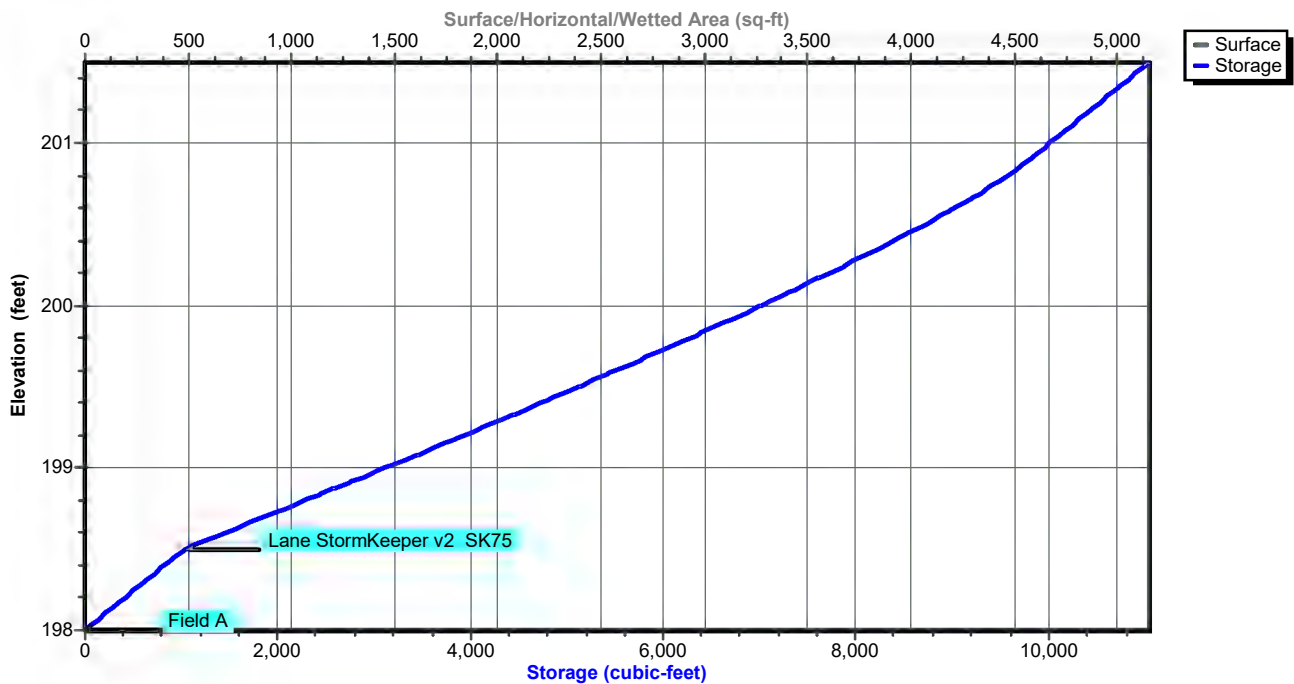
### Pond 5P: Short - Stormkeeper Chamber

Hydrograph



### Pond 5P: Short - Stormkeeper Chamber

Stage-Area-Storage



**Hydrograph for Pond 5P: Short - Stormkeeper Chamber**

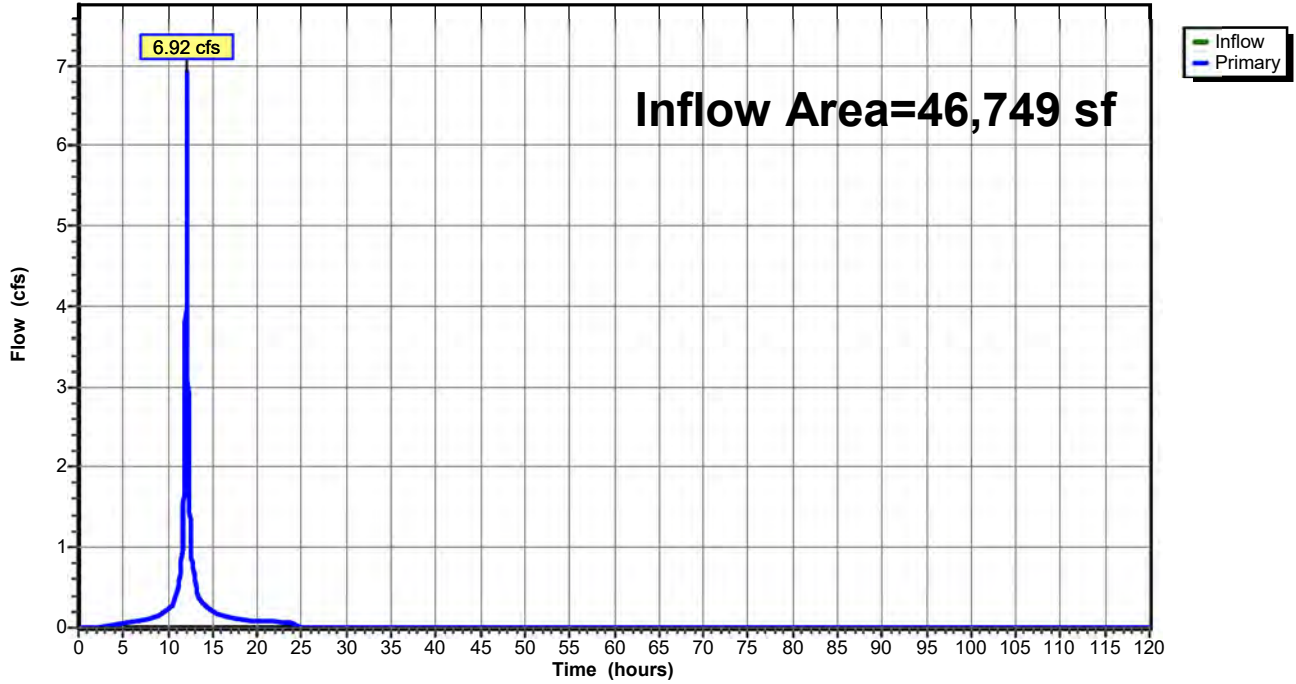
Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	198.00	0.00	<b>0.00</b>	0.00
5.00	0.05	111	198.05	0.03	<b>0.03</b>	0.00
10.00	<b>0.22</b>	<b>1,447</b>	<b>198.60</b>	<b>0.03</b>	0.03	<b>0.00</b>
15.00	<b>0.17</b>	<b>3,680</b>	<b>199.14</b>	<b>0.27</b>	0.03	<b>0.23</b>
20.00	0.08	3,124	199.00	0.09	0.03	0.06
25.00	0.00	2,810	198.93	0.05	0.03	0.01
30.00	0.00	2,184	198.77	0.03	0.03	0.00
35.00	0.00	1,583	198.63	0.03	0.03	0.00
40.00	0.00	981	198.48	0.03	0.03	0.00
45.00	0.00	380	198.18	0.03	0.03	0.00
50.00	0.00	1	198.00	0.00	0.00	0.00
55.00	0.00	0	198.00	0.00	0.00	0.00
60.00	0.00	0	198.00	0.00	0.00	0.00
65.00	0.00	0	198.00	0.00	0.00	0.00
70.00	0.00	0	198.00	0.00	0.00	0.00
75.00	0.00	0	198.00	0.00	0.00	0.00
80.00	0.00	0	198.00	0.00	0.00	0.00
85.00	0.00	0	198.00	0.00	0.00	0.00
90.00	0.00	0	198.00	0.00	0.00	0.00
95.00	0.00	0	198.00	0.00	0.00	0.00
100.00	0.00	0	198.00	0.00	0.00	0.00
105.00	0.00	0	198.00	0.00	0.00	0.00
110.00	0.00	0	198.00	0.00	0.00	0.00
115.00	0.00	0	198.00	0.00	0.00	0.00
120.00	0.00	0	198.00	0.00	0.00	0.00

**Stage-Area-Storage for Pond 5P: Short - Stormkeeper Chamber**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
198.00	5,154	0	200.60	5,154	9,027
198.05	5,154	103	200.65	5,154	9,173
198.10	5,154	206	200.70	5,154	9,312
198.15	5,154	309	200.75	5,154	9,444
198.20	5,154	412	200.80	5,154	9,569
198.25	5,154	515	200.85	5,154	9,688
198.30	5,154	618	200.90	5,154	9,802
198.35	5,154	722	200.95	5,154	9,910
198.40	5,154	825	201.00	5,154	10,015
198.45	5,154	928	201.05	5,154	10,118
198.50	5,154	1,031	201.10	5,154	10,221
198.55	5,154	1,242	201.15	5,154	10,324
198.60	5,154	1,452	201.20	5,154	10,427
198.65	5,154	1,662	201.25	5,154	10,530
198.70	5,154	1,872	201.30	5,154	10,633
198.75	5,154	2,080	201.35	5,154	10,736
198.80	5,154	2,289	201.40	5,154	10,839
198.85	5,154	2,496	201.45	5,154	10,943
198.90	5,154	2,703	201.50	5,154	11,046
198.95	5,154	2,909			
199.00	5,154	3,114			
199.05	5,154	3,319			
199.10	5,154	3,523			
199.15	5,154	3,726			
199.20	5,154	3,928			
199.25	5,154	4,129			
199.30	5,154	4,329			
199.35	5,154	4,528			
199.40	5,154	4,727			
199.45	5,154	4,924			
199.50	5,154	5,120			
199.55	5,154	5,315			
199.60	5,154	5,509			
199.65	5,154	5,702			
199.70	5,154	5,894			
199.75	5,154	6,084			
199.80	5,154	6,273			
199.85	5,154	6,460			
199.90	5,154	6,646			
199.95	5,154	6,830			
200.00	5,154	7,012			
200.05	5,154	7,193			
200.10	5,154	7,372			
200.15	5,154	7,549			
200.20	5,154	7,724			
200.25	5,154	7,896			
200.30	5,154	8,067			
200.35	5,154	8,235			
200.40	5,154	8,400			
200.45	5,154	8,562			
200.50	5,154	8,721			
200.55	5,154	8,876			

Pond E: POA-1-E

Hydrograph

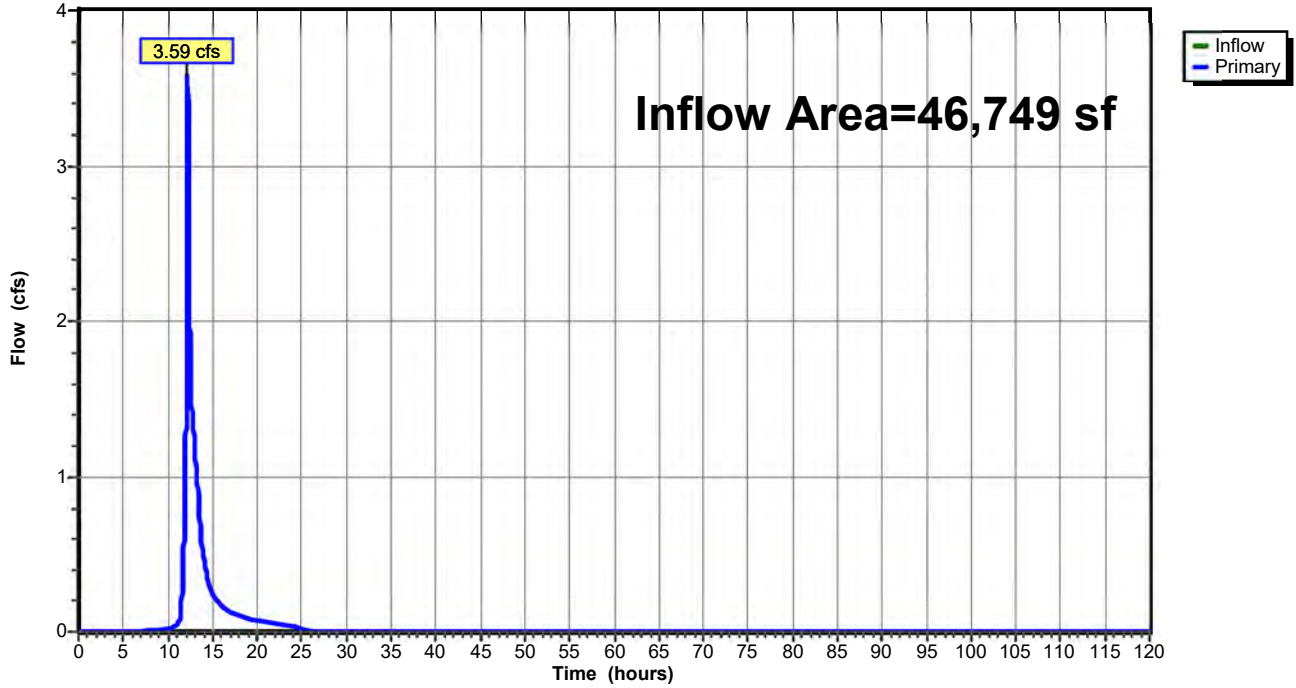


**Hydrograph for Pond E: POA-1-E**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	104.00	0.00		0.00
2.00	0.00		0.00	106.00	0.00		0.00
4.00	0.04		0.04	108.00	0.00		0.00
6.00	0.06		0.06	110.00	0.00		0.00
8.00	0.12		0.12	112.00	0.00		0.00
10.00	0.23		0.23	114.00	0.00		0.00
12.00	<b>3.95</b>		<b>3.95</b>	116.00	0.00		0.00
14.00	<b>0.29</b>		<b>0.29</b>	118.00	0.00		0.00
16.00	0.16		0.16	120.00	0.00		0.00
18.00	0.11		0.11				
20.00	0.09		0.09				
22.00	0.08		0.08				
24.00	0.08		0.08				
26.00	0.00		0.00				
28.00	0.00		0.00				
30.00	0.00		0.00				
32.00	0.00		0.00				
34.00	0.00		0.00				
36.00	0.00		0.00				
38.00	0.00		0.00				
40.00	0.00		0.00				
42.00	0.00		0.00				
44.00	0.00		0.00				
46.00	0.00		0.00				
48.00	0.00		0.00				
50.00	0.00		0.00				
52.00	0.00		0.00				
54.00	0.00		0.00				
56.00	0.00		0.00				
58.00	0.00		0.00				
60.00	0.00		0.00				
62.00	0.00		0.00				
64.00	0.00		0.00				
66.00	0.00		0.00				
68.00	0.00		0.00				
70.00	0.00		0.00				
72.00	0.00		0.00				
74.00	0.00		0.00				
76.00	0.00		0.00				
78.00	0.00		0.00				
80.00	0.00		0.00				
82.00	0.00		0.00				
84.00	0.00		0.00				
86.00	0.00		0.00				
88.00	0.00		0.00				
90.00	0.00		0.00				
92.00	0.00		0.00				
94.00	0.00		0.00				
96.00	0.00		0.00				
98.00	0.00		0.00				
100.00	0.00		0.00				
102.00	0.00		0.00				

Pond P: POA-1-P

Hydrograph

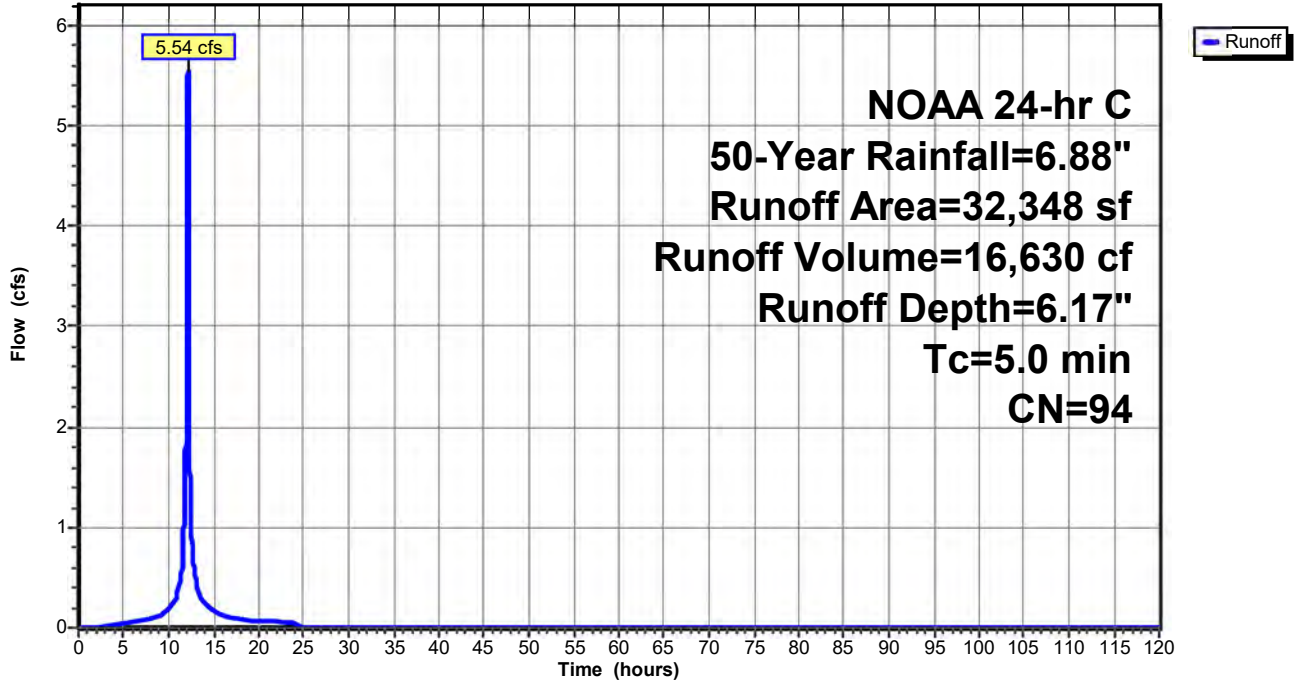


**Hydrograph for Pond P: POA-1-P**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	104.00	0.00		0.00
2.00	0.00		0.00	106.00	0.00		0.00
4.00	0.00		0.00	108.00	0.00		0.00
6.00	0.00		0.00	110.00	0.00		0.00
8.00	0.01		0.01	112.00	0.00		0.00
10.00	0.02		0.02	114.00	0.00		0.00
12.00	<b>1.31</b>		<b>1.31</b>	116.00	0.00		0.00
14.00	<b>0.47</b>		<b>0.47</b>	118.00	0.00		0.00
16.00	0.16		0.16	120.00	0.00		0.00
18.00	0.10		0.10				
20.00	0.07		0.07				
22.00	0.05		0.05				
24.00	0.04		0.04				
26.00	0.00		0.00				
28.00	0.00		0.00				
30.00	0.00		0.00				
32.00	0.00		0.00				
34.00	0.00		0.00				
36.00	0.00		0.00				
38.00	0.00		0.00				
40.00	0.00		0.00				
42.00	0.00		0.00				
44.00	0.00		0.00				
46.00	0.00		0.00				
48.00	0.00		0.00				
50.00	0.00		0.00				
52.00	0.00		0.00				
54.00	0.00		0.00				
56.00	0.00		0.00				
58.00	0.00		0.00				
60.00	0.00		0.00				
62.00	0.00		0.00				
64.00	0.00		0.00				
66.00	0.00		0.00				
68.00	0.00		0.00				
70.00	0.00		0.00				
72.00	0.00		0.00				
74.00	0.00		0.00				
76.00	0.00		0.00				
78.00	0.00		0.00				
80.00	0.00		0.00				
82.00	0.00		0.00				
84.00	0.00		0.00				
86.00	0.00		0.00				
88.00	0.00		0.00				
90.00	0.00		0.00				
92.00	0.00		0.00				
94.00	0.00		0.00				
96.00	0.00		0.00				
98.00	0.00		0.00				
100.00	0.00		0.00				
102.00	0.00		0.00				

Subcatchment 1E: Disturbed Managed

Hydrograph

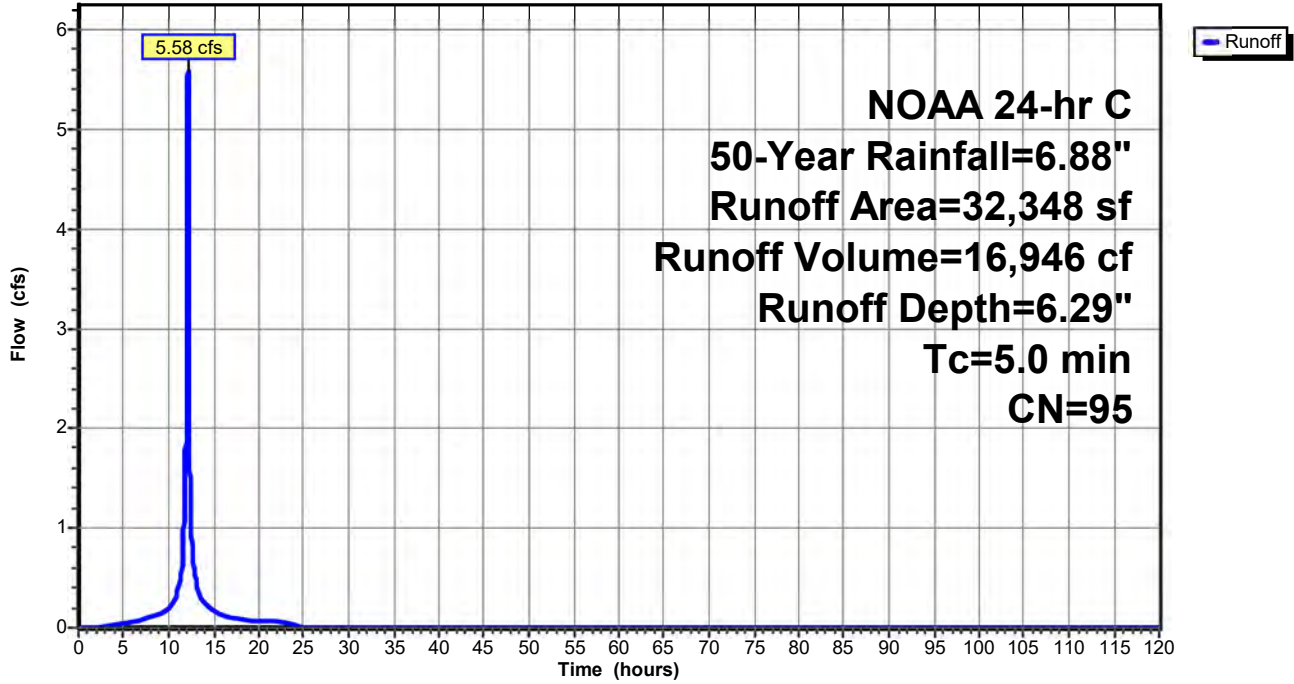


**Hydrograph for Subcatchment 1E: Disturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	6.88	6.17	0.00
2.00	0.16	0.00	0.00	106.00	6.88	6.17	0.00
4.00	0.34	0.05	0.03	108.00	6.88	6.17	0.00
6.00	0.55	0.17	0.05	110.00	6.88	6.17	0.00
8.00	0.82	0.36	0.09	112.00	6.88	6.17	0.00
10.00	1.25	0.72	0.19	114.00	6.88	6.17	0.00
12.00	3.28	2.62	<b>3.16</b>	116.00	6.88	6.17	0.00
14.00	5.63	4.93	<b>0.23</b>	118.00	6.88	6.17	0.00
16.00	6.06	5.35	0.13	120.00	6.88	6.17	0.00
18.00	6.33	5.63	0.08				
20.00	6.54	5.84	0.07				
22.00	6.72	6.01	0.06				
24.00	<b>6.88</b>	<b>6.17</b>	0.06				
26.00	6.88	6.17	0.00				
28.00	6.88	6.17	0.00				
30.00	6.88	6.17	0.00				
32.00	6.88	6.17	0.00				
34.00	6.88	6.17	0.00				
36.00	6.88	6.17	0.00				
38.00	6.88	6.17	0.00				
40.00	6.88	6.17	0.00				
42.00	6.88	6.17	0.00				
44.00	6.88	6.17	0.00				
46.00	6.88	6.17	0.00				
48.00	6.88	6.17	0.00				
50.00	6.88	6.17	0.00				
52.00	6.88	6.17	0.00				
54.00	6.88	6.17	0.00				
56.00	6.88	6.17	0.00				
58.00	6.88	6.17	0.00				
60.00	6.88	6.17	0.00				
62.00	6.88	6.17	0.00				
64.00	6.88	6.17	0.00				
66.00	6.88	6.17	0.00				
68.00	6.88	6.17	0.00				
70.00	6.88	6.17	0.00				
72.00	6.88	6.17	0.00				
74.00	6.88	6.17	0.00				
76.00	6.88	6.17	0.00				
78.00	6.88	6.17	0.00				
80.00	6.88	6.17	0.00				
82.00	6.88	6.17	0.00				
84.00	6.88	6.17	0.00				
86.00	6.88	6.17	0.00				
88.00	6.88	6.17	0.00				
90.00	6.88	6.17	0.00				
92.00	6.88	6.17	0.00				
94.00	6.88	6.17	0.00				
96.00	6.88	6.17	0.00				
98.00	6.88	6.17	0.00				
100.00	6.88	6.17	0.00				
102.00	6.88	6.17	0.00				

**Subcatchment 1P: Disturbed Managed**

Hydrograph

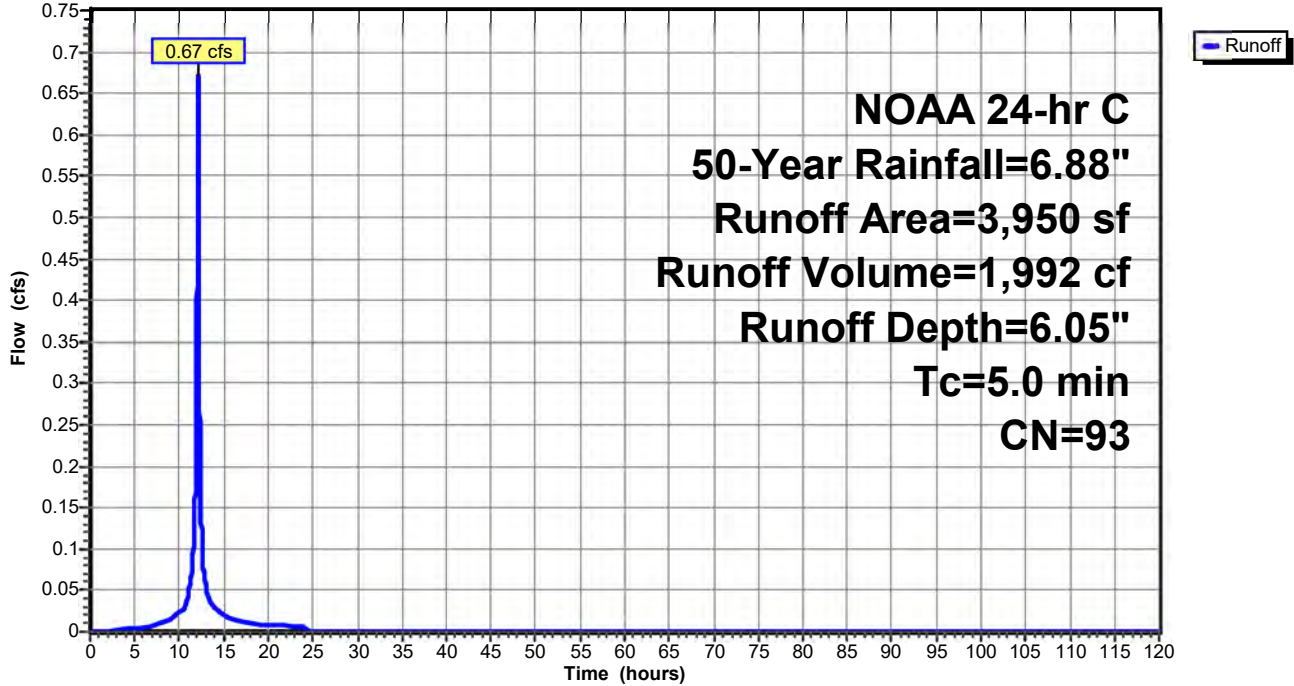


**Hydrograph for Subcatchment 1P: Disturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	6.88	6.29	0.00
2.00	0.16	0.00	0.01	106.00	6.88	6.29	0.00
4.00	0.34	0.07	0.04	108.00	6.88	6.29	0.00
6.00	0.55	0.20	0.06	110.00	6.88	6.29	0.00
8.00	0.82	0.42	0.10	112.00	6.88	6.29	0.00
10.00	1.25	0.79	0.20	114.00	6.88	6.29	0.00
12.00	3.28	2.72	<b>3.20</b>	116.00	6.88	6.29	0.00
14.00	5.63	5.04	<b>0.23</b>	118.00	6.88	6.29	0.00
16.00	6.06	5.47	0.13	120.00	6.88	6.29	0.00
18.00	6.33	5.74	0.08				
20.00	6.54	5.95	0.07				
22.00	6.72	6.13	0.06				
24.00	<b>6.88</b>	<b>6.29</b>	0.06				
26.00	6.88	6.29	0.00				
28.00	6.88	6.29	0.00				
30.00	6.88	6.29	0.00				
32.00	6.88	6.29	0.00				
34.00	6.88	6.29	0.00				
36.00	6.88	6.29	0.00				
38.00	6.88	6.29	0.00				
40.00	6.88	6.29	0.00				
42.00	6.88	6.29	0.00				
44.00	6.88	6.29	0.00				
46.00	6.88	6.29	0.00				
48.00	6.88	6.29	0.00				
50.00	6.88	6.29	0.00				
52.00	6.88	6.29	0.00				
54.00	6.88	6.29	0.00				
56.00	6.88	6.29	0.00				
58.00	6.88	6.29	0.00				
60.00	6.88	6.29	0.00				
62.00	6.88	6.29	0.00				
64.00	6.88	6.29	0.00				
66.00	6.88	6.29	0.00				
68.00	6.88	6.29	0.00				
70.00	6.88	6.29	0.00				
72.00	6.88	6.29	0.00				
74.00	6.88	6.29	0.00				
76.00	6.88	6.29	0.00				
78.00	6.88	6.29	0.00				
80.00	6.88	6.29	0.00				
82.00	6.88	6.29	0.00				
84.00	6.88	6.29	0.00				
86.00	6.88	6.29	0.00				
88.00	6.88	6.29	0.00				
90.00	6.88	6.29	0.00				
92.00	6.88	6.29	0.00				
94.00	6.88	6.29	0.00				
96.00	6.88	6.29	0.00				
98.00	6.88	6.29	0.00				
100.00	6.88	6.29	0.00				
102.00	6.88	6.29	0.00				

Subcatchment 2E: Disturbed Unmanaged

Hydrograph

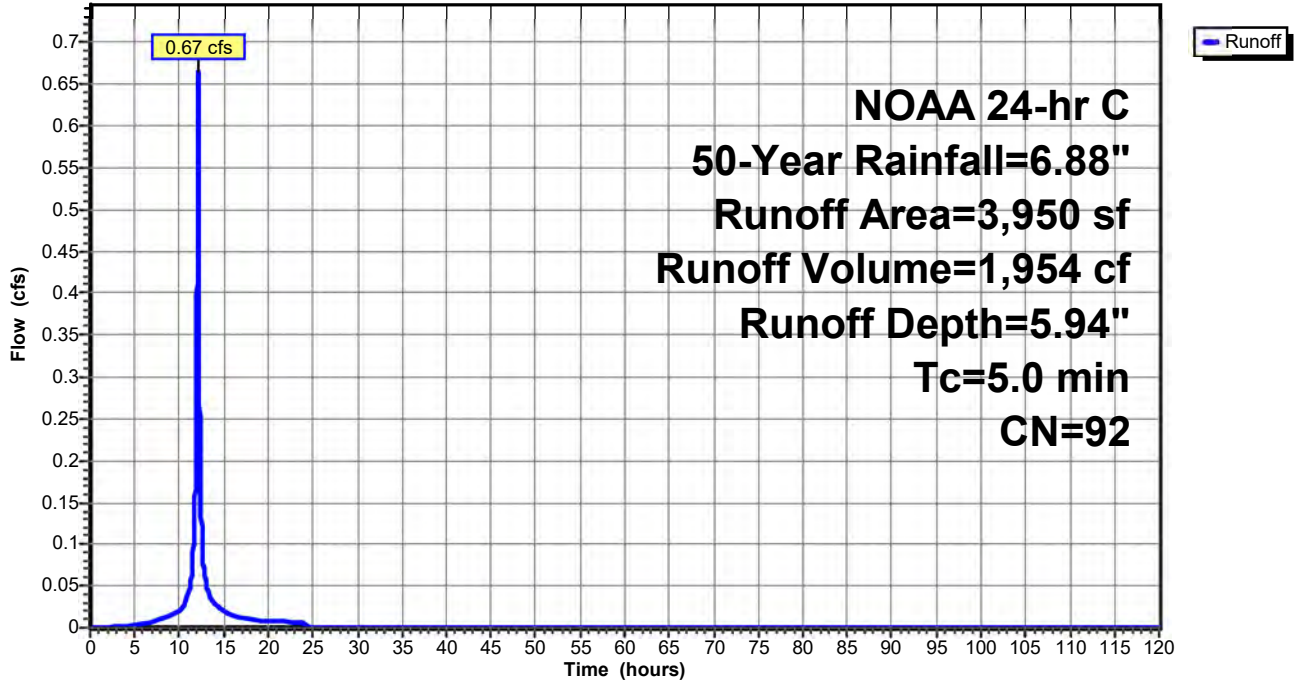


**Hydrograph for Subcatchment 2E: Disturbed Unmanaged**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	6.88	6.05	0.00
2.00	0.16	0.00	0.00	106.00	6.88	6.05	0.00
4.00	0.34	0.04	0.00	108.00	6.88	6.05	0.00
6.00	0.55	0.14	0.01	110.00	6.88	6.05	0.00
8.00	0.82	0.32	0.01	112.00	6.88	6.05	0.00
10.00	1.25	0.66	0.02	114.00	6.88	6.05	0.00
12.00	3.28	2.52	<b>0.38</b>	116.00	6.88	6.05	0.00
14.00	5.63	4.81	<b>0.03</b>	118.00	6.88	6.05	0.00
16.00	6.06	5.24	0.02	120.00	6.88	6.05	0.00
18.00	6.33	5.51	0.01				
20.00	6.54	5.72	0.01				
22.00	6.72	5.90	0.01				
24.00	<b>6.88</b>	<b>6.05</b>	0.01				
26.00	6.88	6.05	0.00				
28.00	6.88	6.05	0.00				
30.00	6.88	6.05	0.00				
32.00	6.88	6.05	0.00				
34.00	6.88	6.05	0.00				
36.00	6.88	6.05	0.00				
38.00	6.88	6.05	0.00				
40.00	6.88	6.05	0.00				
42.00	6.88	6.05	0.00				
44.00	6.88	6.05	0.00				
46.00	6.88	6.05	0.00				
48.00	6.88	6.05	0.00				
50.00	6.88	6.05	0.00				
52.00	6.88	6.05	0.00				
54.00	6.88	6.05	0.00				
56.00	6.88	6.05	0.00				
58.00	6.88	6.05	0.00				
60.00	6.88	6.05	0.00				
62.00	6.88	6.05	0.00				
64.00	6.88	6.05	0.00				
66.00	6.88	6.05	0.00				
68.00	6.88	6.05	0.00				
70.00	6.88	6.05	0.00				
72.00	6.88	6.05	0.00				
74.00	6.88	6.05	0.00				
76.00	6.88	6.05	0.00				
78.00	6.88	6.05	0.00				
80.00	6.88	6.05	0.00				
82.00	6.88	6.05	0.00				
84.00	6.88	6.05	0.00				
86.00	6.88	6.05	0.00				
88.00	6.88	6.05	0.00				
90.00	6.88	6.05	0.00				
92.00	6.88	6.05	0.00				
94.00	6.88	6.05	0.00				
96.00	6.88	6.05	0.00				
98.00	6.88	6.05	0.00				
100.00	6.88	6.05	0.00				
102.00	6.88	6.05	0.00				

Subcatchment 2P: Disturbed Unmanaged

Hydrograph

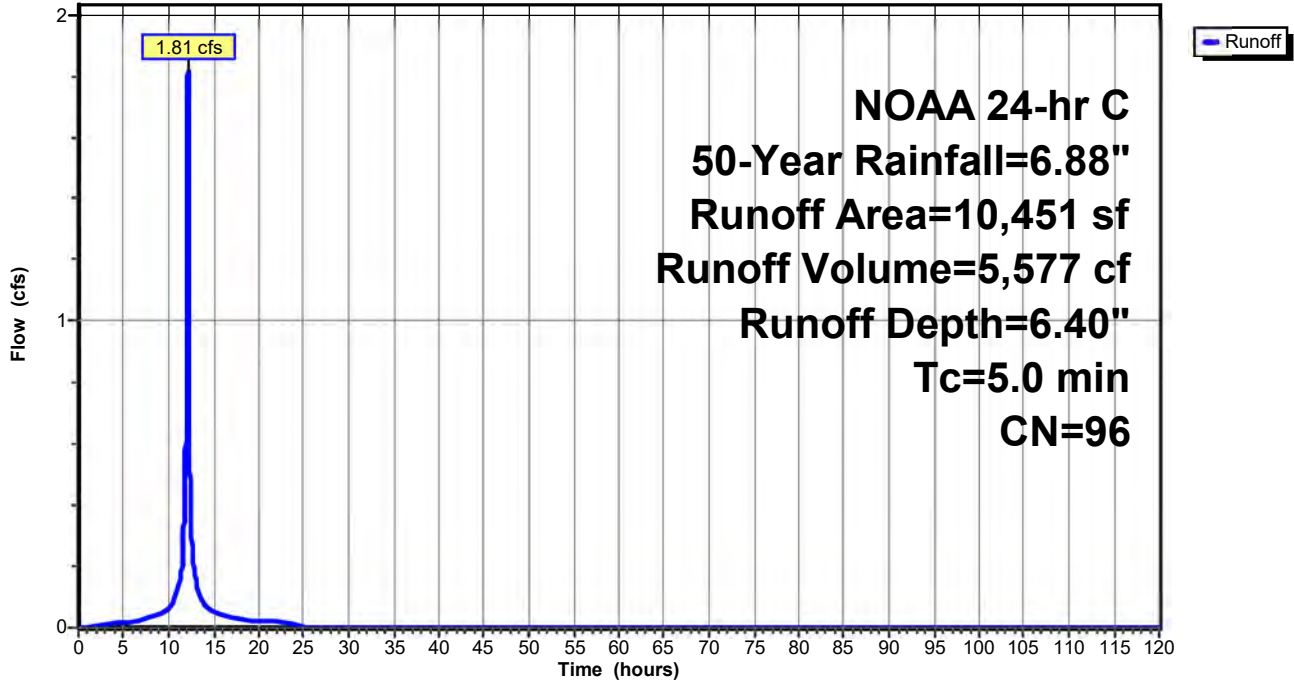


**Hydrograph for Subcatchment 2P: Disturbed Unmanaged**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	6.88	5.94	0.00
2.00	0.16	0.00	0.00	106.00	6.88	5.94	0.00
4.00	0.34	0.03	0.00	108.00	6.88	5.94	0.00
6.00	0.55	0.11	0.01	110.00	6.88	5.94	0.00
8.00	0.82	0.28	0.01	112.00	6.88	5.94	0.00
10.00	1.25	0.60	0.02	114.00	6.88	5.94	0.00
12.00	3.28	2.43	<b>0.38</b>	116.00	6.88	5.94	0.00
14.00	5.63	4.70	<b>0.03</b>	118.00	6.88	5.94	0.00
16.00	6.06	5.12	0.02	120.00	6.88	5.94	0.00
18.00	6.33	5.40	0.01				
20.00	6.54	5.60	0.01				
22.00	6.72	5.78	0.01				
24.00	<b>6.88</b>	<b>5.94</b>	0.01				
26.00	6.88	5.94	0.00				
28.00	6.88	5.94	0.00				
30.00	6.88	5.94	0.00				
32.00	6.88	5.94	0.00				
34.00	6.88	5.94	0.00				
36.00	6.88	5.94	0.00				
38.00	6.88	5.94	0.00				
40.00	6.88	5.94	0.00				
42.00	6.88	5.94	0.00				
44.00	6.88	5.94	0.00				
46.00	6.88	5.94	0.00				
48.00	6.88	5.94	0.00				
50.00	6.88	5.94	0.00				
52.00	6.88	5.94	0.00				
54.00	6.88	5.94	0.00				
56.00	6.88	5.94	0.00				
58.00	6.88	5.94	0.00				
60.00	6.88	5.94	0.00				
62.00	6.88	5.94	0.00				
64.00	6.88	5.94	0.00				
66.00	6.88	5.94	0.00				
68.00	6.88	5.94	0.00				
70.00	6.88	5.94	0.00				
72.00	6.88	5.94	0.00				
74.00	6.88	5.94	0.00				
76.00	6.88	5.94	0.00				
78.00	6.88	5.94	0.00				
80.00	6.88	5.94	0.00				
82.00	6.88	5.94	0.00				
84.00	6.88	5.94	0.00				
86.00	6.88	5.94	0.00				
88.00	6.88	5.94	0.00				
90.00	6.88	5.94	0.00				
92.00	6.88	5.94	0.00				
94.00	6.88	5.94	0.00				
96.00	6.88	5.94	0.00				
98.00	6.88	5.94	0.00				
100.00	6.88	5.94	0.00				
102.00	6.88	5.94	0.00				

### Subcatchment 3E: Undisturbed Managed

Hydrograph

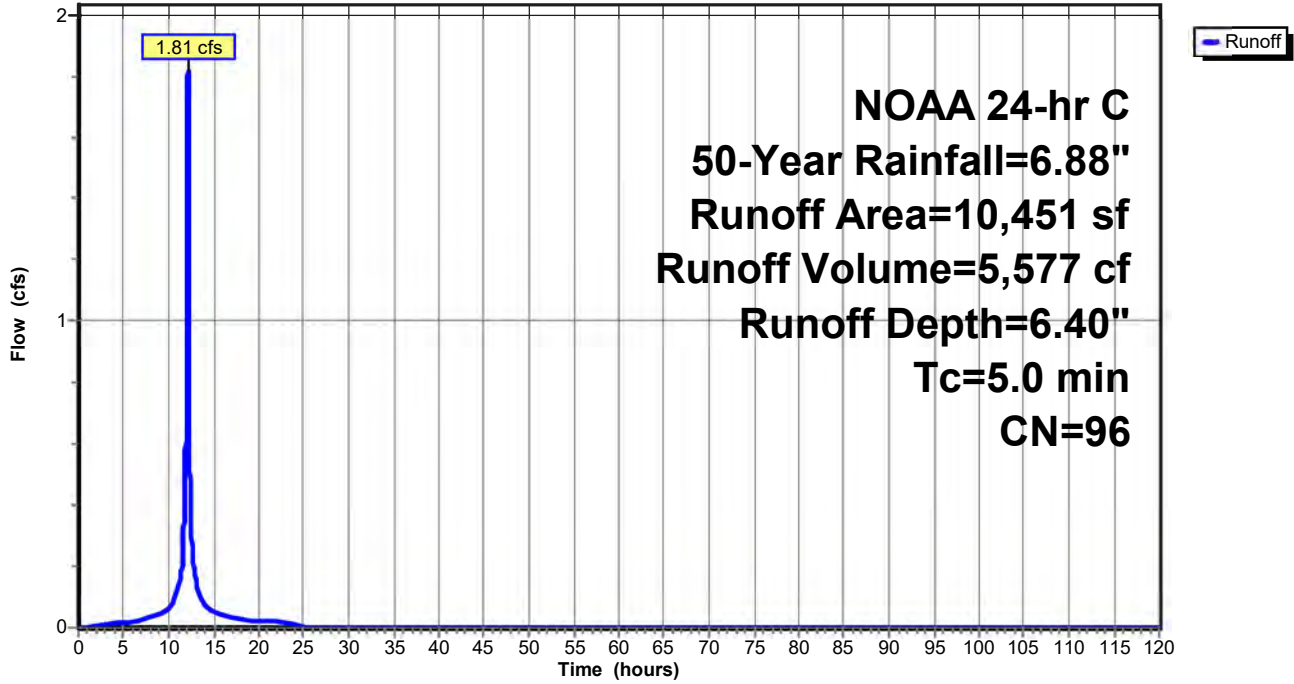


**Hydrograph for Subcatchment 3E: Undisturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	6.88	6.40	0.00
2.00	0.16	0.01	0.01	106.00	6.88	6.40	0.00
4.00	0.34	0.10	0.01	108.00	6.88	6.40	0.00
6.00	0.55	0.24	0.02	110.00	6.88	6.40	0.00
8.00	0.82	0.47	0.03	112.00	6.88	6.40	0.00
10.00	1.25	0.86	0.07	114.00	6.88	6.40	0.00
12.00	3.28	2.83	<b>1.04</b>	116.00	6.88	6.40	0.00
14.00	5.63	5.15	<b>0.07</b>	118.00	6.88	6.40	0.00
16.00	6.06	5.58	0.04	120.00	6.88	6.40	0.00
18.00	6.33	5.86	0.03				
20.00	6.54	6.07	0.02				
22.00	6.72	6.25	0.02				
24.00	<b>6.88</b>	<b>6.40</b>	0.02				
26.00	6.88	6.40	0.00				
28.00	6.88	6.40	0.00				
30.00	6.88	6.40	0.00				
32.00	6.88	6.40	0.00				
34.00	6.88	6.40	0.00				
36.00	6.88	6.40	0.00				
38.00	6.88	6.40	0.00				
40.00	6.88	6.40	0.00				
42.00	6.88	6.40	0.00				
44.00	6.88	6.40	0.00				
46.00	6.88	6.40	0.00				
48.00	6.88	6.40	0.00				
50.00	6.88	6.40	0.00				
52.00	6.88	6.40	0.00				
54.00	6.88	6.40	0.00				
56.00	6.88	6.40	0.00				
58.00	6.88	6.40	0.00				
60.00	6.88	6.40	0.00				
62.00	6.88	6.40	0.00				
64.00	6.88	6.40	0.00				
66.00	6.88	6.40	0.00				
68.00	6.88	6.40	0.00				
70.00	6.88	6.40	0.00				
72.00	6.88	6.40	0.00				
74.00	6.88	6.40	0.00				
76.00	6.88	6.40	0.00				
78.00	6.88	6.40	0.00				
80.00	6.88	6.40	0.00				
82.00	6.88	6.40	0.00				
84.00	6.88	6.40	0.00				
86.00	6.88	6.40	0.00				
88.00	6.88	6.40	0.00				
90.00	6.88	6.40	0.00				
92.00	6.88	6.40	0.00				
94.00	6.88	6.40	0.00				
96.00	6.88	6.40	0.00				
98.00	6.88	6.40	0.00				
100.00	6.88	6.40	0.00				
102.00	6.88	6.40	0.00				

Subcatchment 3P: Undisturbed Managed

Hydrograph

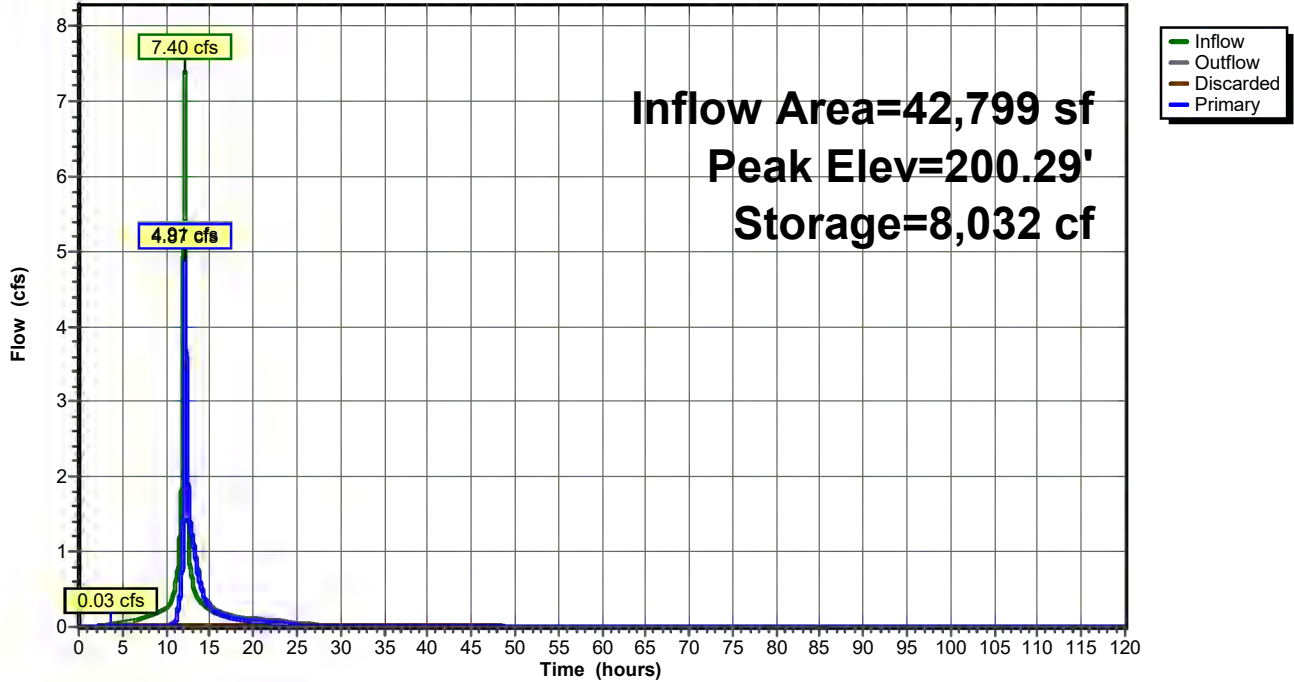


**Hydrograph for Subcatchment 3P: Undisturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	6.88	6.40	0.00
2.00	0.16	0.01	0.01	106.00	6.88	6.40	0.00
4.00	0.34	0.10	0.01	108.00	6.88	6.40	0.00
6.00	0.55	0.24	0.02	110.00	6.88	6.40	0.00
8.00	0.82	0.47	0.03	112.00	6.88	6.40	0.00
10.00	1.25	0.86	0.07	114.00	6.88	6.40	0.00
12.00	3.28	2.83	<b>1.04</b>	116.00	6.88	6.40	0.00
14.00	5.63	5.15	<b>0.07</b>	118.00	6.88	6.40	0.00
16.00	6.06	5.58	0.04	120.00	6.88	6.40	0.00
18.00	6.33	5.86	0.03				
20.00	6.54	6.07	0.02				
22.00	6.72	6.25	0.02				
24.00	<b>6.88</b>	<b>6.40</b>	0.02				
26.00	6.88	6.40	0.00				
28.00	6.88	6.40	0.00				
30.00	6.88	6.40	0.00				
32.00	6.88	6.40	0.00				
34.00	6.88	6.40	0.00				
36.00	6.88	6.40	0.00				
38.00	6.88	6.40	0.00				
40.00	6.88	6.40	0.00				
42.00	6.88	6.40	0.00				
44.00	6.88	6.40	0.00				
46.00	6.88	6.40	0.00				
48.00	6.88	6.40	0.00				
50.00	6.88	6.40	0.00				
52.00	6.88	6.40	0.00				
54.00	6.88	6.40	0.00				
56.00	6.88	6.40	0.00				
58.00	6.88	6.40	0.00				
60.00	6.88	6.40	0.00				
62.00	6.88	6.40	0.00				
64.00	6.88	6.40	0.00				
66.00	6.88	6.40	0.00				
68.00	6.88	6.40	0.00				
70.00	6.88	6.40	0.00				
72.00	6.88	6.40	0.00				
74.00	6.88	6.40	0.00				
76.00	6.88	6.40	0.00				
78.00	6.88	6.40	0.00				
80.00	6.88	6.40	0.00				
82.00	6.88	6.40	0.00				
84.00	6.88	6.40	0.00				
86.00	6.88	6.40	0.00				
88.00	6.88	6.40	0.00				
90.00	6.88	6.40	0.00				
92.00	6.88	6.40	0.00				
94.00	6.88	6.40	0.00				
96.00	6.88	6.40	0.00				
98.00	6.88	6.40	0.00				
100.00	6.88	6.40	0.00				
102.00	6.88	6.40	0.00				

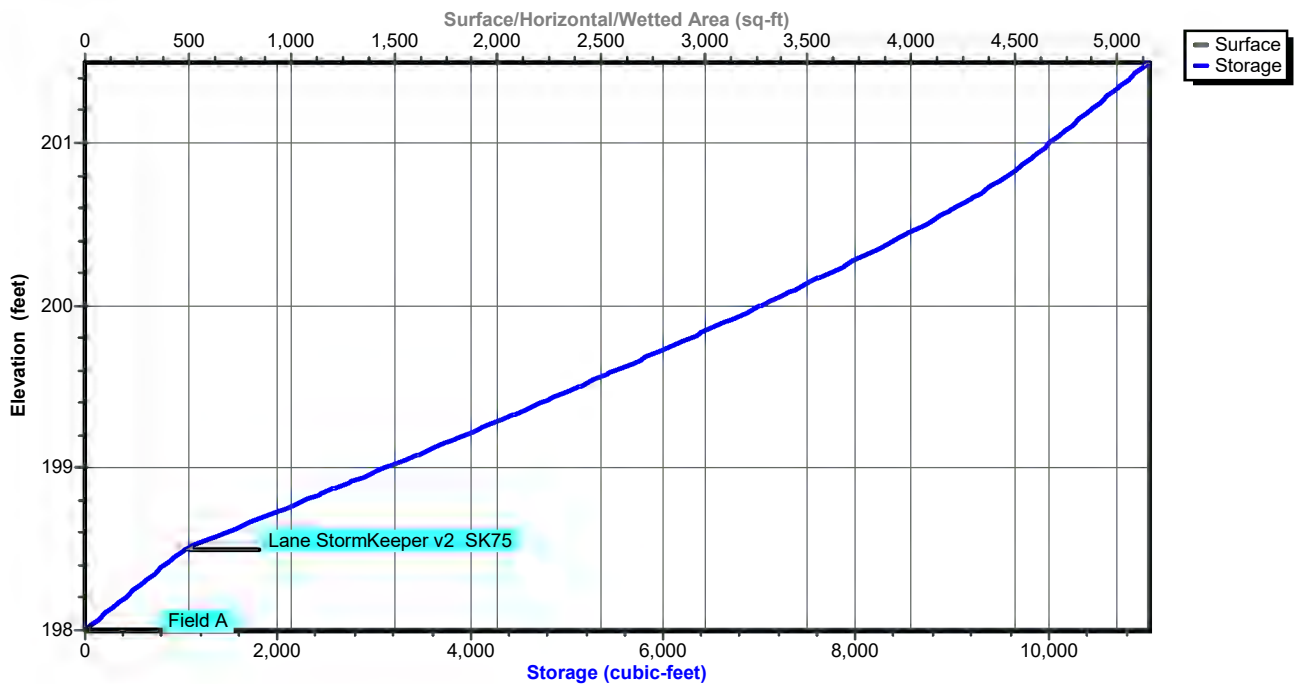
### Pond 5P: Short - Stormkeeper Chamber

Hydrograph



### Pond 5P: Short - Stormkeeper Chamber

Stage-Area-Storage



**Hydrograph for Pond 5P: Short - Stormkeeper Chamber**

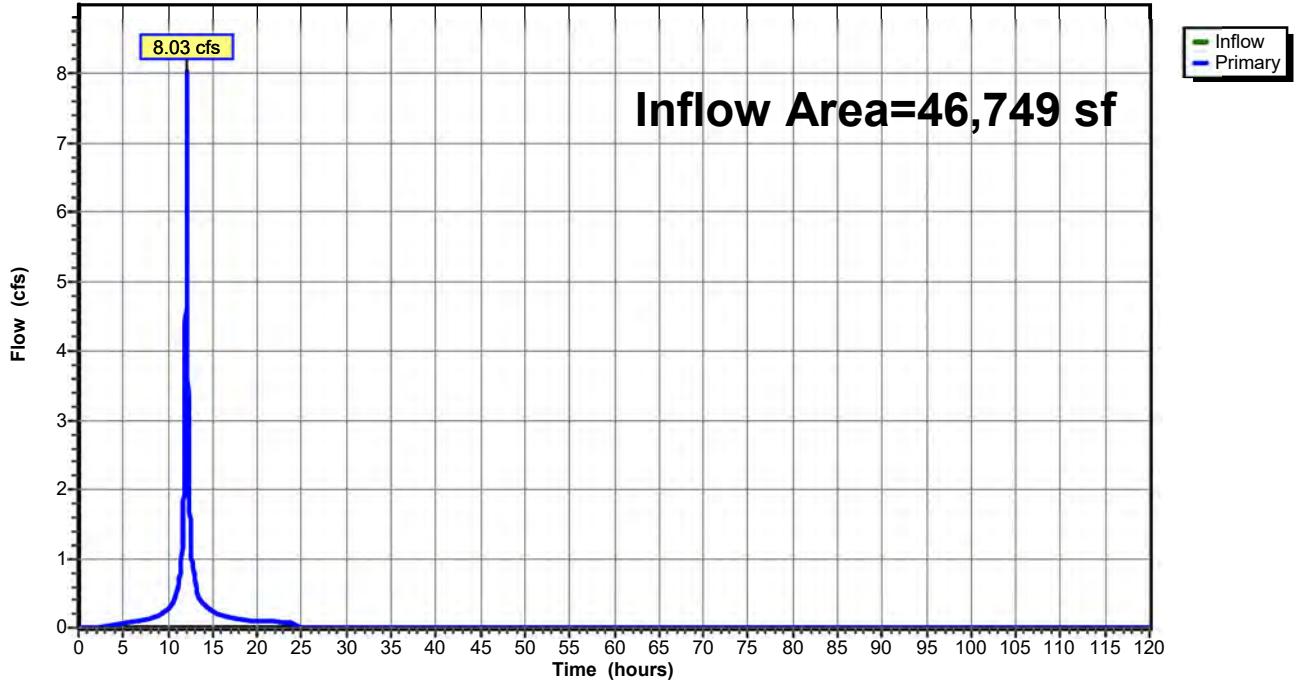
Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	198.00	0.00	<b>0.00</b>	0.00
5.00	0.07	184	198.09	0.03	<b>0.03</b>	0.00
10.00	<b>0.26</b>	<b>1,916</b>	<b>198.71</b>	<b>0.03</b>	0.03	<b>0.00</b>
15.00	<b>0.20</b>	<b>3,764</b>	<b>199.16</b>	<b>0.30</b>	0.03	<b>0.27</b>
20.00	0.10	3,180	199.02	0.11	0.03	0.07
25.00	0.00	2,845	198.93	0.05	0.03	0.02
30.00	0.00	2,209	198.78	0.03	0.03	0.00
35.00	0.00	1,608	198.64	0.03	0.03	0.00
40.00	0.00	1,006	198.49	0.03	0.03	0.00
45.00	0.00	405	198.20	0.03	0.03	0.00
50.00	0.00	2	198.00	0.00	0.00	0.00
55.00	0.00	0	198.00	0.00	0.00	0.00
60.00	0.00	0	198.00	0.00	0.00	0.00
65.00	0.00	0	198.00	0.00	0.00	0.00
70.00	0.00	0	198.00	0.00	0.00	0.00
75.00	0.00	0	198.00	0.00	0.00	0.00
80.00	0.00	0	198.00	0.00	0.00	0.00
85.00	0.00	0	198.00	0.00	0.00	0.00
90.00	0.00	0	198.00	0.00	0.00	0.00
95.00	0.00	0	198.00	0.00	0.00	0.00
100.00	0.00	0	198.00	0.00	0.00	0.00
105.00	0.00	0	198.00	0.00	0.00	0.00
110.00	0.00	0	198.00	0.00	0.00	0.00
115.00	0.00	0	198.00	0.00	0.00	0.00
120.00	0.00	0	198.00	0.00	0.00	0.00

**Stage-Area-Storage for Pond 5P: Short - Stormkeeper Chamber**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
198.00	5,154	0	200.60	5,154	9,027
198.05	5,154	103	200.65	5,154	9,173
198.10	5,154	206	200.70	5,154	9,312
198.15	5,154	309	200.75	5,154	9,444
198.20	5,154	412	200.80	5,154	9,569
198.25	5,154	515	200.85	5,154	9,688
198.30	5,154	618	200.90	5,154	9,802
198.35	5,154	722	200.95	5,154	9,910
198.40	5,154	825	201.00	5,154	10,015
198.45	5,154	928	201.05	5,154	10,118
198.50	5,154	1,031	201.10	5,154	10,221
198.55	5,154	1,242	201.15	5,154	10,324
198.60	5,154	1,452	201.20	5,154	10,427
198.65	5,154	1,662	201.25	5,154	10,530
198.70	5,154	1,872	201.30	5,154	10,633
198.75	5,154	2,080	201.35	5,154	10,736
198.80	5,154	2,289	201.40	5,154	10,839
198.85	5,154	2,496	201.45	5,154	10,943
198.90	5,154	2,703	201.50	5,154	11,046
198.95	5,154	2,909			
199.00	5,154	3,114			
199.05	5,154	3,319			
199.10	5,154	3,523			
199.15	5,154	3,726			
199.20	5,154	3,928			
199.25	5,154	4,129			
199.30	5,154	4,329			
199.35	5,154	4,528			
199.40	5,154	4,727			
199.45	5,154	4,924			
199.50	5,154	5,120			
199.55	5,154	5,315			
199.60	5,154	5,509			
199.65	5,154	5,702			
199.70	5,154	5,894			
199.75	5,154	6,084			
199.80	5,154	6,273			
199.85	5,154	6,460			
199.90	5,154	6,646			
199.95	5,154	6,830			
200.00	5,154	7,012			
200.05	5,154	7,193			
200.10	5,154	7,372			
200.15	5,154	7,549			
200.20	5,154	7,724			
200.25	5,154	7,896			
200.30	5,154	8,067			
200.35	5,154	8,235			
200.40	5,154	8,400			
200.45	5,154	8,562			
200.50	5,154	8,721			
200.55	5,154	8,876			

### Pond E: POA-1-E

Hydrograph

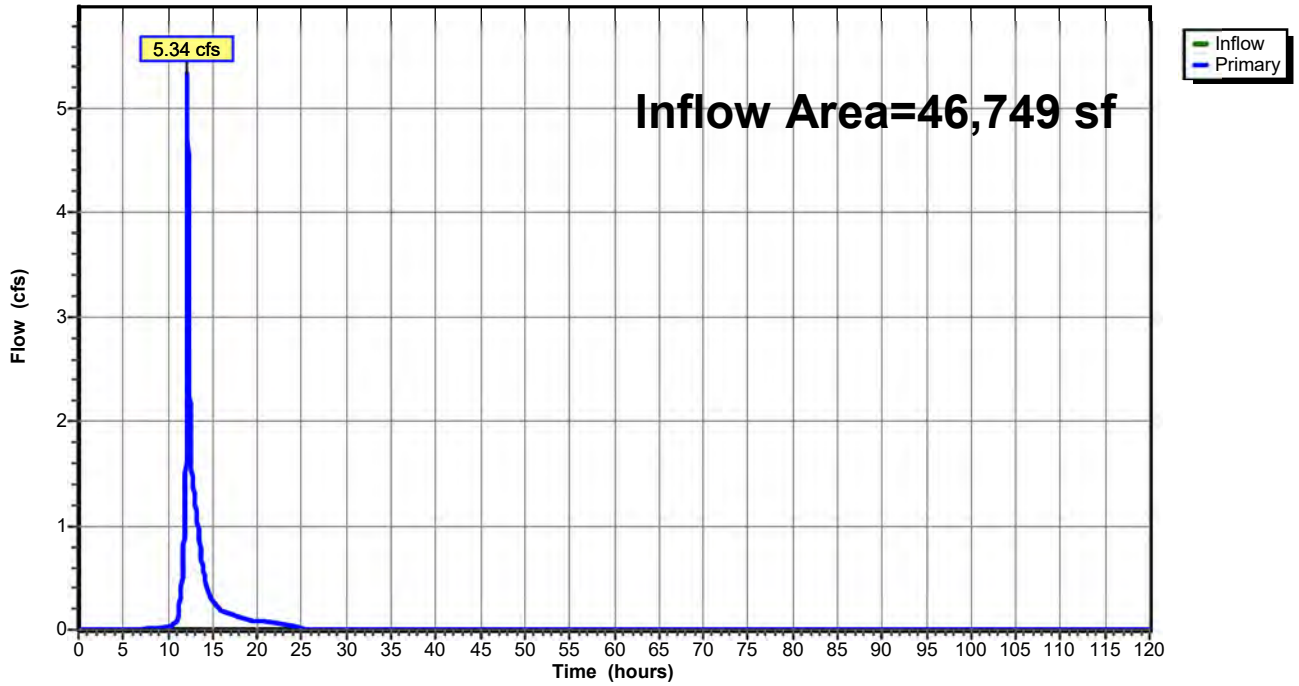


**Hydrograph for Pond E: POA-1-E**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	104.00	0.00		0.00
2.00	0.01		0.01	106.00	0.00		0.00
4.00	0.05		0.05	108.00	0.00		0.00
6.00	0.08		0.08	110.00	0.00		0.00
8.00	0.14		0.14	112.00	0.00		0.00
10.00	0.28		0.28	114.00	0.00		0.00
12.00	<b>4.59</b>		<b>4.59</b>	116.00	0.00		0.00
14.00	<b>0.33</b>		<b>0.33</b>	118.00	0.00		0.00
16.00	0.18		0.18	120.00	0.00		0.00
18.00	0.12		0.12				
20.00	0.11		0.11				
22.00	0.09		0.09				
24.00	0.09		0.09				
26.00	0.00		0.00				
28.00	0.00		0.00				
30.00	0.00		0.00				
32.00	0.00		0.00				
34.00	0.00		0.00				
36.00	0.00		0.00				
38.00	0.00		0.00				
40.00	0.00		0.00				
42.00	0.00		0.00				
44.00	0.00		0.00				
46.00	0.00		0.00				
48.00	0.00		0.00				
50.00	0.00		0.00				
52.00	0.00		0.00				
54.00	0.00		0.00				
56.00	0.00		0.00				
58.00	0.00		0.00				
60.00	0.00		0.00				
62.00	0.00		0.00				
64.00	0.00		0.00				
66.00	0.00		0.00				
68.00	0.00		0.00				
70.00	0.00		0.00				
72.00	0.00		0.00				
74.00	0.00		0.00				
76.00	0.00		0.00				
78.00	0.00		0.00				
80.00	0.00		0.00				
82.00	0.00		0.00				
84.00	0.00		0.00				
86.00	0.00		0.00				
88.00	0.00		0.00				
90.00	0.00		0.00				
92.00	0.00		0.00				
94.00	0.00		0.00				
96.00	0.00		0.00				
98.00	0.00		0.00				
100.00	0.00		0.00				
102.00	0.00		0.00				

### Pond P: POA-1-P

Hydrograph

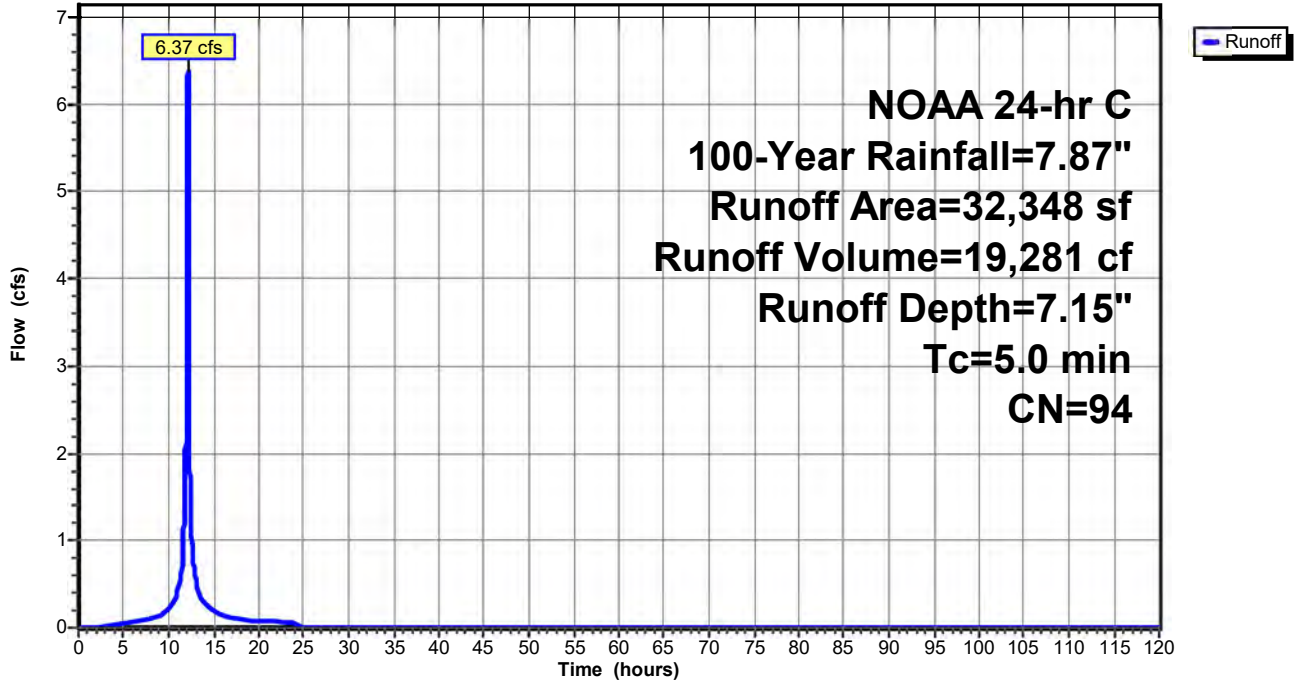


**Hydrograph for Pond P: POA-1-P**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	104.00	0.00		0.00
2.00	0.00		0.00	106.00	0.00		0.00
4.00	0.00		0.00	108.00	0.00		0.00
6.00	0.01		0.01	110.00	0.00		0.00
8.00	0.01		0.01	112.00	0.00		0.00
10.00	0.02		0.02	114.00	0.00		0.00
12.00	<b>1.57</b>		<b>1.57</b>	116.00	0.00		0.00
14.00	<b>0.54</b>		<b>0.54</b>	118.00	0.00		0.00
16.00	0.19		0.19	120.00	0.00		0.00
18.00	0.12		0.12				
20.00	0.08		0.08				
22.00	0.07		0.07				
24.00	0.05		0.05				
26.00	0.00		0.00				
28.00	0.00		0.00				
30.00	0.00		0.00				
32.00	0.00		0.00				
34.00	0.00		0.00				
36.00	0.00		0.00				
38.00	0.00		0.00				
40.00	0.00		0.00				
42.00	0.00		0.00				
44.00	0.00		0.00				
46.00	0.00		0.00				
48.00	0.00		0.00				
50.00	0.00		0.00				
52.00	0.00		0.00				
54.00	0.00		0.00				
56.00	0.00		0.00				
58.00	0.00		0.00				
60.00	0.00		0.00				
62.00	0.00		0.00				
64.00	0.00		0.00				
66.00	0.00		0.00				
68.00	0.00		0.00				
70.00	0.00		0.00				
72.00	0.00		0.00				
74.00	0.00		0.00				
76.00	0.00		0.00				
78.00	0.00		0.00				
80.00	0.00		0.00				
82.00	0.00		0.00				
84.00	0.00		0.00				
86.00	0.00		0.00				
88.00	0.00		0.00				
90.00	0.00		0.00				
92.00	0.00		0.00				
94.00	0.00		0.00				
96.00	0.00		0.00				
98.00	0.00		0.00				
100.00	0.00		0.00				
102.00	0.00		0.00				

Subcatchment 1E: Disturbed Managed

Hydrograph

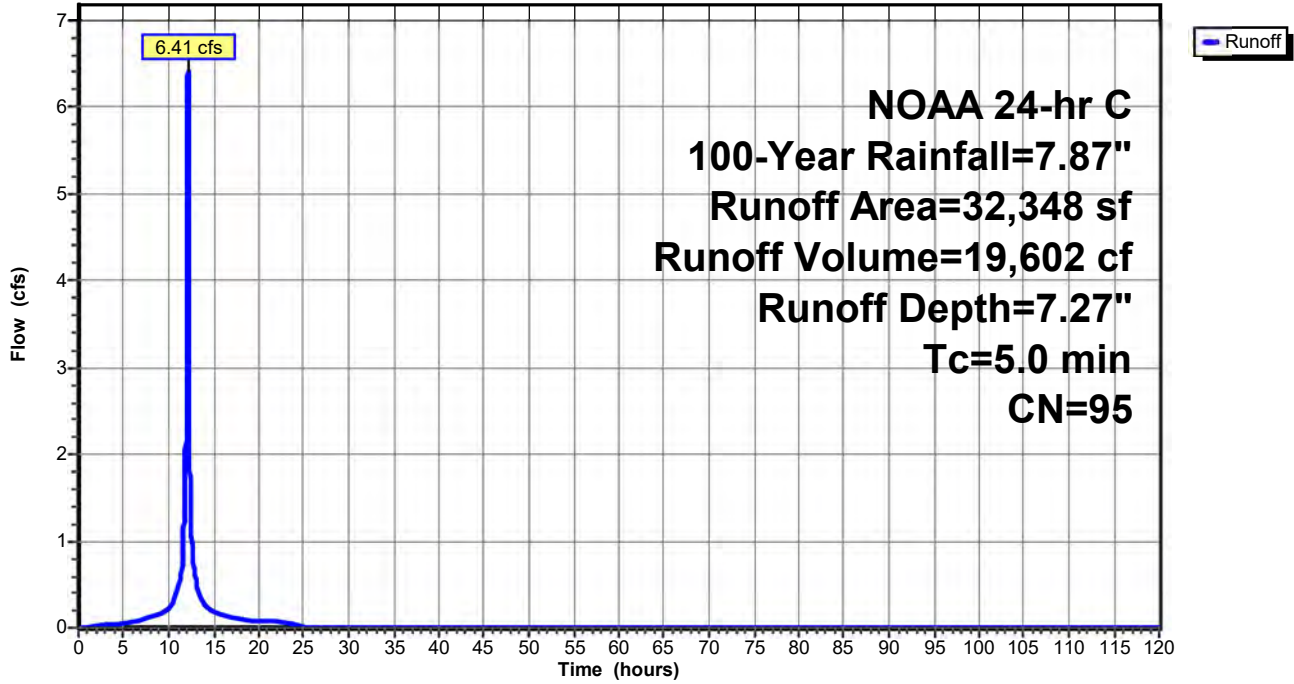


**Hydrograph for Subcatchment 1E: Disturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	7.87	7.15	0.00
2.00	0.18	0.00	0.01	106.00	7.87	7.15	0.00
4.00	0.39	0.07	0.04	108.00	7.87	7.15	0.00
6.00	0.62	0.22	0.06	110.00	7.87	7.15	0.00
8.00	0.94	0.46	0.11	112.00	7.87	7.15	0.00
10.00	1.43	0.88	0.22	114.00	7.87	7.15	0.00
12.00	3.75	3.08	<b>3.65</b>	116.00	7.87	7.15	0.00
14.00	6.44	5.73	<b>0.26</b>	118.00	7.87	7.15	0.00
16.00	6.93	6.22	0.14	120.00	7.87	7.15	0.00
18.00	7.25	6.53	0.10				
20.00	7.48	6.77	0.08				
22.00	7.69	6.98	0.07				
24.00	<b>7.87</b>	<b>7.15</b>	0.07				
26.00	7.87	7.15	0.00				
28.00	7.87	7.15	0.00				
30.00	7.87	7.15	0.00				
32.00	7.87	7.15	0.00				
34.00	7.87	7.15	0.00				
36.00	7.87	7.15	0.00				
38.00	7.87	7.15	0.00				
40.00	7.87	7.15	0.00				
42.00	7.87	7.15	0.00				
44.00	7.87	7.15	0.00				
46.00	7.87	7.15	0.00				
48.00	7.87	7.15	0.00				
50.00	7.87	7.15	0.00				
52.00	7.87	7.15	0.00				
54.00	7.87	7.15	0.00				
56.00	7.87	7.15	0.00				
58.00	7.87	7.15	0.00				
60.00	7.87	7.15	0.00				
62.00	7.87	7.15	0.00				
64.00	7.87	7.15	0.00				
66.00	7.87	7.15	0.00				
68.00	7.87	7.15	0.00				
70.00	7.87	7.15	0.00				
72.00	7.87	7.15	0.00				
74.00	7.87	7.15	0.00				
76.00	7.87	7.15	0.00				
78.00	7.87	7.15	0.00				
80.00	7.87	7.15	0.00				
82.00	7.87	7.15	0.00				
84.00	7.87	7.15	0.00				
86.00	7.87	7.15	0.00				
88.00	7.87	7.15	0.00				
90.00	7.87	7.15	0.00				
92.00	7.87	7.15	0.00				
94.00	7.87	7.15	0.00				
96.00	7.87	7.15	0.00				
98.00	7.87	7.15	0.00				
100.00	7.87	7.15	0.00				
102.00	7.87	7.15	0.00				

### Subcatchment 1P: Disturbed Managed

Hydrograph

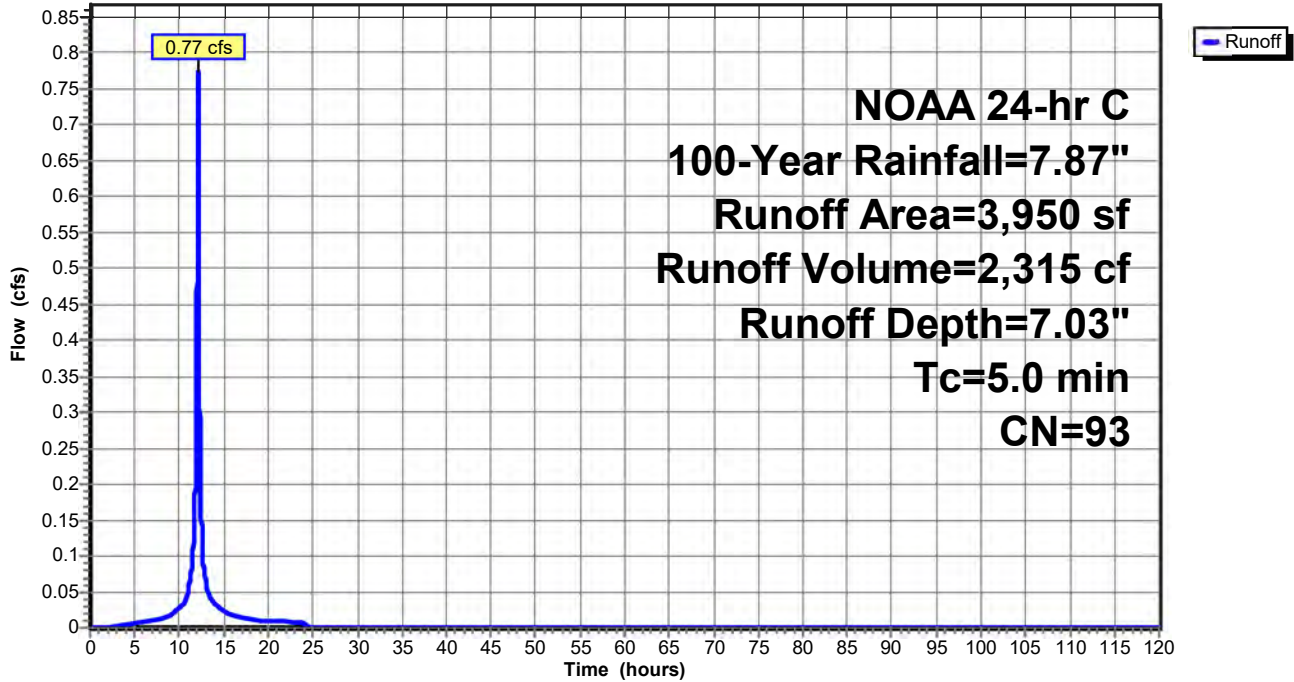


**Hydrograph for Subcatchment 1P: Disturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	7.87	7.27	0.00
2.00	0.18	0.01	0.01	106.00	7.87	7.27	0.00
4.00	0.39	0.10	0.05	108.00	7.87	7.27	0.00
6.00	0.62	0.26	0.07	110.00	7.87	7.27	0.00
8.00	0.94	0.51	0.12	112.00	7.87	7.27	0.00
10.00	1.43	0.95	0.23	114.00	7.87	7.27	0.00
12.00	3.75	3.19	<b>3.67</b>	116.00	7.87	7.27	0.00
14.00	6.44	5.84	<b>0.26</b>	118.00	7.87	7.27	0.00
16.00	6.93	6.33	0.14	120.00	7.87	7.27	0.00
18.00	7.25	6.65	0.10				
20.00	7.48	6.89	0.08				
22.00	7.69	7.09	0.07				
24.00	<b>7.87</b>	<b>7.27</b>	0.07				
26.00	7.87	7.27	0.00				
28.00	7.87	7.27	0.00				
30.00	7.87	7.27	0.00				
32.00	7.87	7.27	0.00				
34.00	7.87	7.27	0.00				
36.00	7.87	7.27	0.00				
38.00	7.87	7.27	0.00				
40.00	7.87	7.27	0.00				
42.00	7.87	7.27	0.00				
44.00	7.87	7.27	0.00				
46.00	7.87	7.27	0.00				
48.00	7.87	7.27	0.00				
50.00	7.87	7.27	0.00				
52.00	7.87	7.27	0.00				
54.00	7.87	7.27	0.00				
56.00	7.87	7.27	0.00				
58.00	7.87	7.27	0.00				
60.00	7.87	7.27	0.00				
62.00	7.87	7.27	0.00				
64.00	7.87	7.27	0.00				
66.00	7.87	7.27	0.00				
68.00	7.87	7.27	0.00				
70.00	7.87	7.27	0.00				
72.00	7.87	7.27	0.00				
74.00	7.87	7.27	0.00				
76.00	7.87	7.27	0.00				
78.00	7.87	7.27	0.00				
80.00	7.87	7.27	0.00				
82.00	7.87	7.27	0.00				
84.00	7.87	7.27	0.00				
86.00	7.87	7.27	0.00				
88.00	7.87	7.27	0.00				
90.00	7.87	7.27	0.00				
92.00	7.87	7.27	0.00				
94.00	7.87	7.27	0.00				
96.00	7.87	7.27	0.00				
98.00	7.87	7.27	0.00				
100.00	7.87	7.27	0.00				
102.00	7.87	7.27	0.00				

Subcatchment 2E: Disturbed Unmanaged

Hydrograph



**2025.08.04 - Noble Town Center - New System**

NOAA 24-hr C 100-Year Rainfall=7.87"

Prepared by Langan Engineering

Printed 8/5/2025

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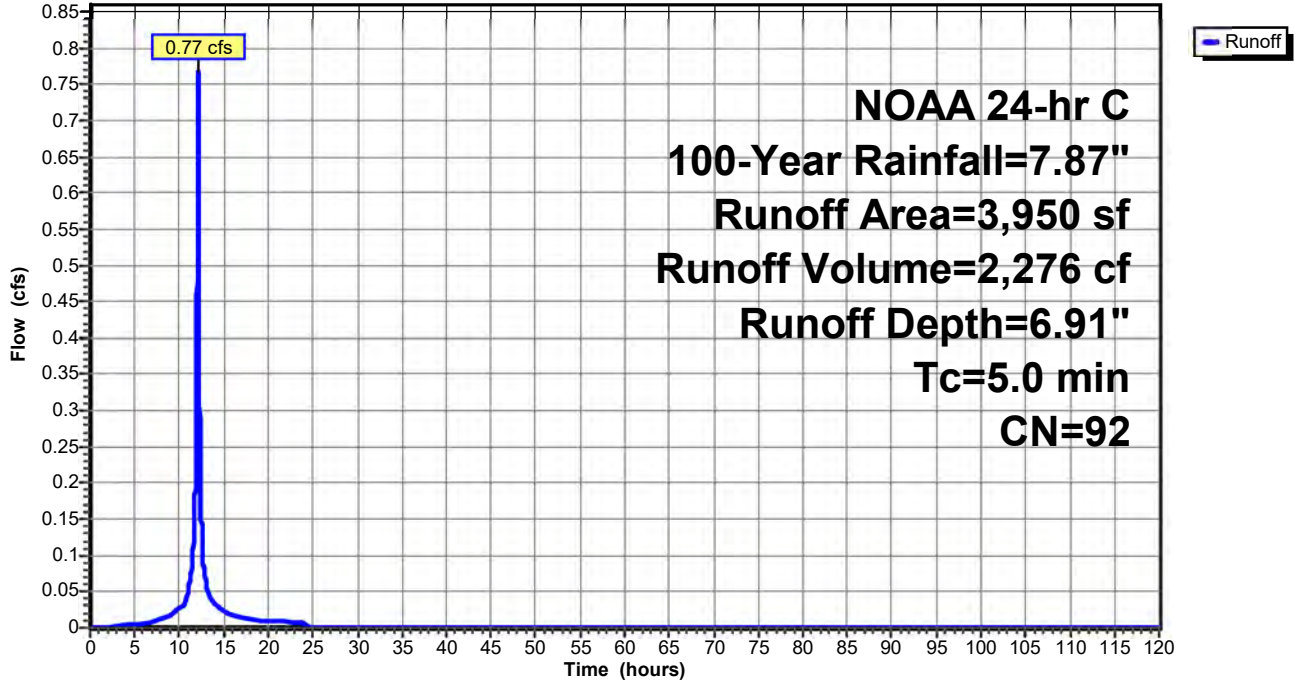
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**Hydrograph for Subcatchment 2E: Disturbed Unmanaged**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	7.87	7.03	0.00
2.00	0.18	0.00	0.00	106.00	7.87	7.03	0.00
4.00	0.39	0.06	0.00	108.00	7.87	7.03	0.00
6.00	0.62	0.18	0.01	110.00	7.87	7.03	0.00
8.00	0.94	0.41	0.01	112.00	7.87	7.03	0.00
10.00	1.43	0.81	0.03	114.00	7.87	7.03	0.00
12.00	3.75	2.98	<b>0.44</b>	116.00	7.87	7.03	0.00
14.00	6.44	5.61	<b>0.03</b>	118.00	7.87	7.03	0.00
16.00	6.93	6.10	0.02	120.00	7.87	7.03	0.00
18.00	7.25	6.42	0.01				
20.00	7.48	6.65	0.01				
22.00	7.69	6.86	0.01				
24.00	<b>7.87</b>	<b>7.03</b>	0.01				
26.00	7.87	7.03	0.00				
28.00	7.87	7.03	0.00				
30.00	7.87	7.03	0.00				
32.00	7.87	7.03	0.00				
34.00	7.87	7.03	0.00				
36.00	7.87	7.03	0.00				
38.00	7.87	7.03	0.00				
40.00	7.87	7.03	0.00				
42.00	7.87	7.03	0.00				
44.00	7.87	7.03	0.00				
46.00	7.87	7.03	0.00				
48.00	7.87	7.03	0.00				
50.00	7.87	7.03	0.00				
52.00	7.87	7.03	0.00				
54.00	7.87	7.03	0.00				
56.00	7.87	7.03	0.00				
58.00	7.87	7.03	0.00				
60.00	7.87	7.03	0.00				
62.00	7.87	7.03	0.00				
64.00	7.87	7.03	0.00				
66.00	7.87	7.03	0.00				
68.00	7.87	7.03	0.00				
70.00	7.87	7.03	0.00				
72.00	7.87	7.03	0.00				
74.00	7.87	7.03	0.00				
76.00	7.87	7.03	0.00				
78.00	7.87	7.03	0.00				
80.00	7.87	7.03	0.00				
82.00	7.87	7.03	0.00				
84.00	7.87	7.03	0.00				
86.00	7.87	7.03	0.00				
88.00	7.87	7.03	0.00				
90.00	7.87	7.03	0.00				
92.00	7.87	7.03	0.00				
94.00	7.87	7.03	0.00				
96.00	7.87	7.03	0.00				
98.00	7.87	7.03	0.00				
100.00	7.87	7.03	0.00				
102.00	7.87	7.03	0.00				

Subcatchment 2P: Disturbed Unmanaged

Hydrograph



**2025.08.04 - Noble Town Center - New System**

NOAA 24-hr C 100-Year Rainfall=7.87"

Prepared by Langan Engineering

Printed 8/5/2025

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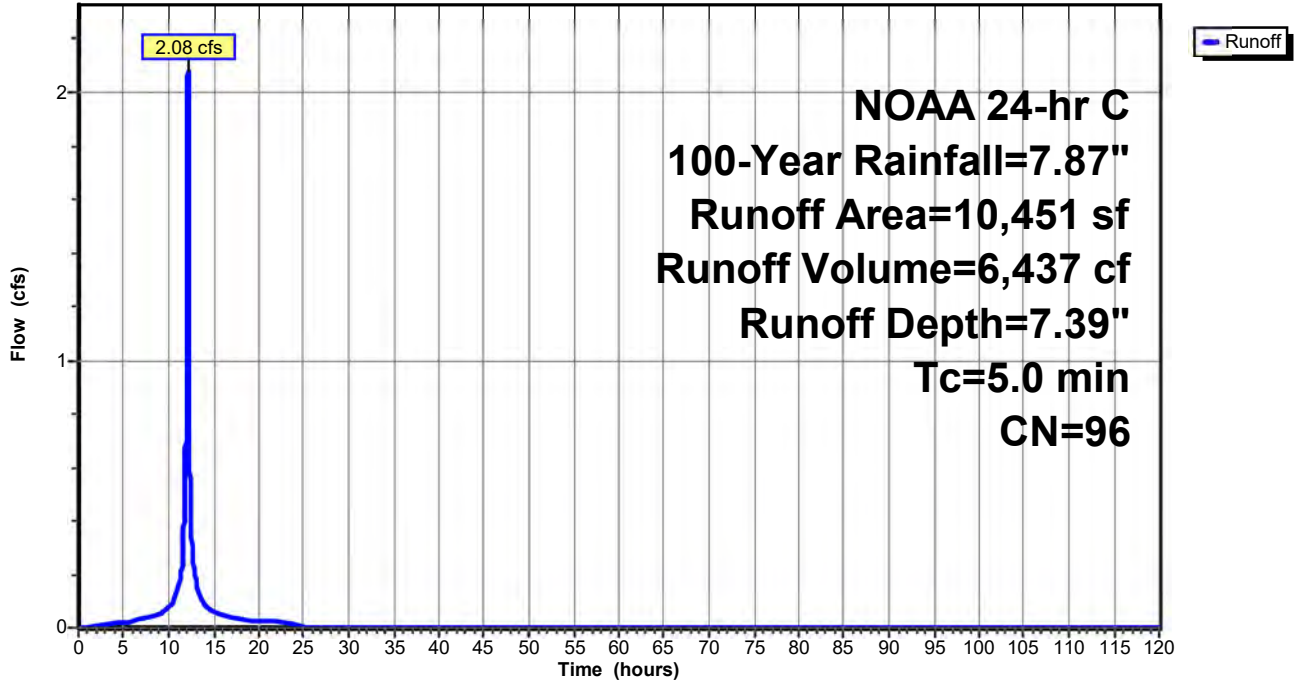
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**Hydrograph for Subcatchment 2P: Disturbed Unmanaged**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	7.87	6.91	0.00
2.00	0.18	0.00	0.00	106.00	7.87	6.91	0.00
4.00	0.39	0.04	0.00	108.00	7.87	6.91	0.00
6.00	0.62	0.15	0.01	110.00	7.87	6.91	0.00
8.00	0.94	0.36	0.01	112.00	7.87	6.91	0.00
10.00	1.43	0.75	0.03	114.00	7.87	6.91	0.00
12.00	3.75	2.88	<b>0.44</b>	116.00	7.87	6.91	0.00
14.00	6.44	5.50	<b>0.03</b>	118.00	7.87	6.91	0.00
16.00	6.93	5.98	0.02	120.00	7.87	6.91	0.00
18.00	7.25	6.30	0.01				
20.00	7.48	6.53	0.01				
22.00	7.69	6.74	0.01				
24.00	<b>7.87</b>	<b>6.91</b>	0.01				
26.00	7.87	6.91	0.00				
28.00	7.87	6.91	0.00				
30.00	7.87	6.91	0.00				
32.00	7.87	6.91	0.00				
34.00	7.87	6.91	0.00				
36.00	7.87	6.91	0.00				
38.00	7.87	6.91	0.00				
40.00	7.87	6.91	0.00				
42.00	7.87	6.91	0.00				
44.00	7.87	6.91	0.00				
46.00	7.87	6.91	0.00				
48.00	7.87	6.91	0.00				
50.00	7.87	6.91	0.00				
52.00	7.87	6.91	0.00				
54.00	7.87	6.91	0.00				
56.00	7.87	6.91	0.00				
58.00	7.87	6.91	0.00				
60.00	7.87	6.91	0.00				
62.00	7.87	6.91	0.00				
64.00	7.87	6.91	0.00				
66.00	7.87	6.91	0.00				
68.00	7.87	6.91	0.00				
70.00	7.87	6.91	0.00				
72.00	7.87	6.91	0.00				
74.00	7.87	6.91	0.00				
76.00	7.87	6.91	0.00				
78.00	7.87	6.91	0.00				
80.00	7.87	6.91	0.00				
82.00	7.87	6.91	0.00				
84.00	7.87	6.91	0.00				
86.00	7.87	6.91	0.00				
88.00	7.87	6.91	0.00				
90.00	7.87	6.91	0.00				
92.00	7.87	6.91	0.00				
94.00	7.87	6.91	0.00				
96.00	7.87	6.91	0.00				
98.00	7.87	6.91	0.00				
100.00	7.87	6.91	0.00				
102.00	7.87	6.91	0.00				

Subcatchment 3E: Undisturbed Managed

Hydrograph

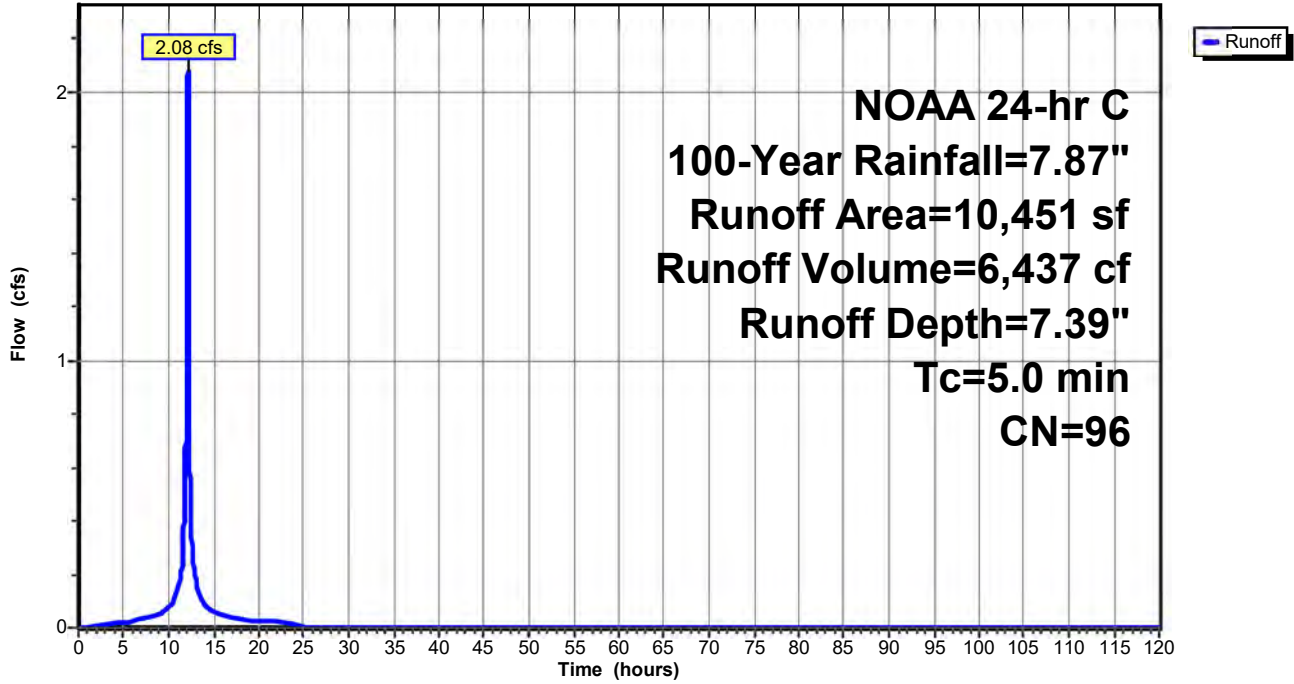


**Hydrograph for Subcatchment 3E: Undisturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	7.87	7.39	0.00
2.00	0.18	0.02	0.01	106.00	7.87	7.39	0.00
4.00	0.39	0.13	0.02	108.00	7.87	7.39	0.00
6.00	0.62	0.31	0.02	110.00	7.87	7.39	0.00
8.00	0.94	0.58	0.04	112.00	7.87	7.39	0.00
10.00	1.43	1.03	0.08	114.00	7.87	7.39	0.00
12.00	3.75	3.29	<b>1.20</b>	116.00	7.87	7.39	0.00
14.00	6.44	5.96	<b>0.09</b>	118.00	7.87	7.39	0.00
16.00	6.93	6.45	0.05	120.00	7.87	7.39	0.00
18.00	7.25	6.77	0.03				
20.00	7.48	7.01	0.03				
22.00	7.69	7.21	0.02				
24.00	<b>7.87</b>	<b>7.39</b>	0.02				
26.00	7.87	7.39	0.00				
28.00	7.87	7.39	0.00				
30.00	7.87	7.39	0.00				
32.00	7.87	7.39	0.00				
34.00	7.87	7.39	0.00				
36.00	7.87	7.39	0.00				
38.00	7.87	7.39	0.00				
40.00	7.87	7.39	0.00				
42.00	7.87	7.39	0.00				
44.00	7.87	7.39	0.00				
46.00	7.87	7.39	0.00				
48.00	7.87	7.39	0.00				
50.00	7.87	7.39	0.00				
52.00	7.87	7.39	0.00				
54.00	7.87	7.39	0.00				
56.00	7.87	7.39	0.00				
58.00	7.87	7.39	0.00				
60.00	7.87	7.39	0.00				
62.00	7.87	7.39	0.00				
64.00	7.87	7.39	0.00				
66.00	7.87	7.39	0.00				
68.00	7.87	7.39	0.00				
70.00	7.87	7.39	0.00				
72.00	7.87	7.39	0.00				
74.00	7.87	7.39	0.00				
76.00	7.87	7.39	0.00				
78.00	7.87	7.39	0.00				
80.00	7.87	7.39	0.00				
82.00	7.87	7.39	0.00				
84.00	7.87	7.39	0.00				
86.00	7.87	7.39	0.00				
88.00	7.87	7.39	0.00				
90.00	7.87	7.39	0.00				
92.00	7.87	7.39	0.00				
94.00	7.87	7.39	0.00				
96.00	7.87	7.39	0.00				
98.00	7.87	7.39	0.00				
100.00	7.87	7.39	0.00				
102.00	7.87	7.39	0.00				

Subcatchment 3P: Undisturbed Managed

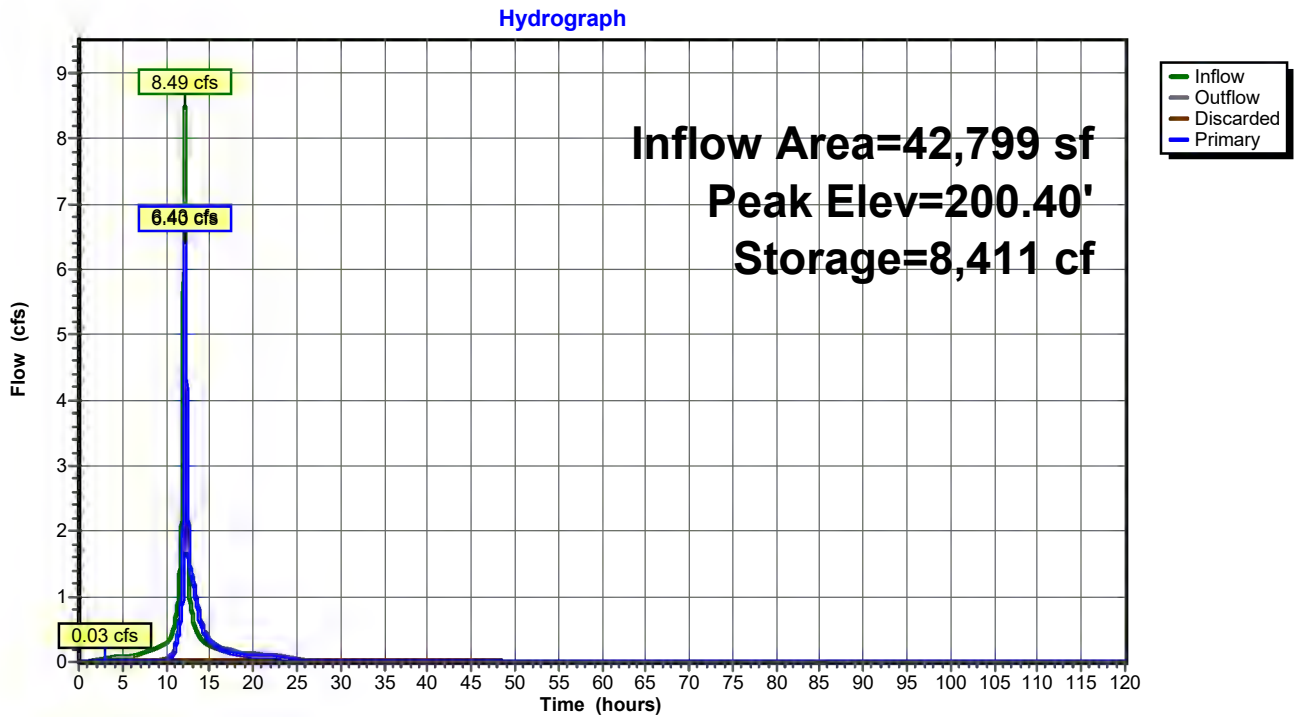
Hydrograph



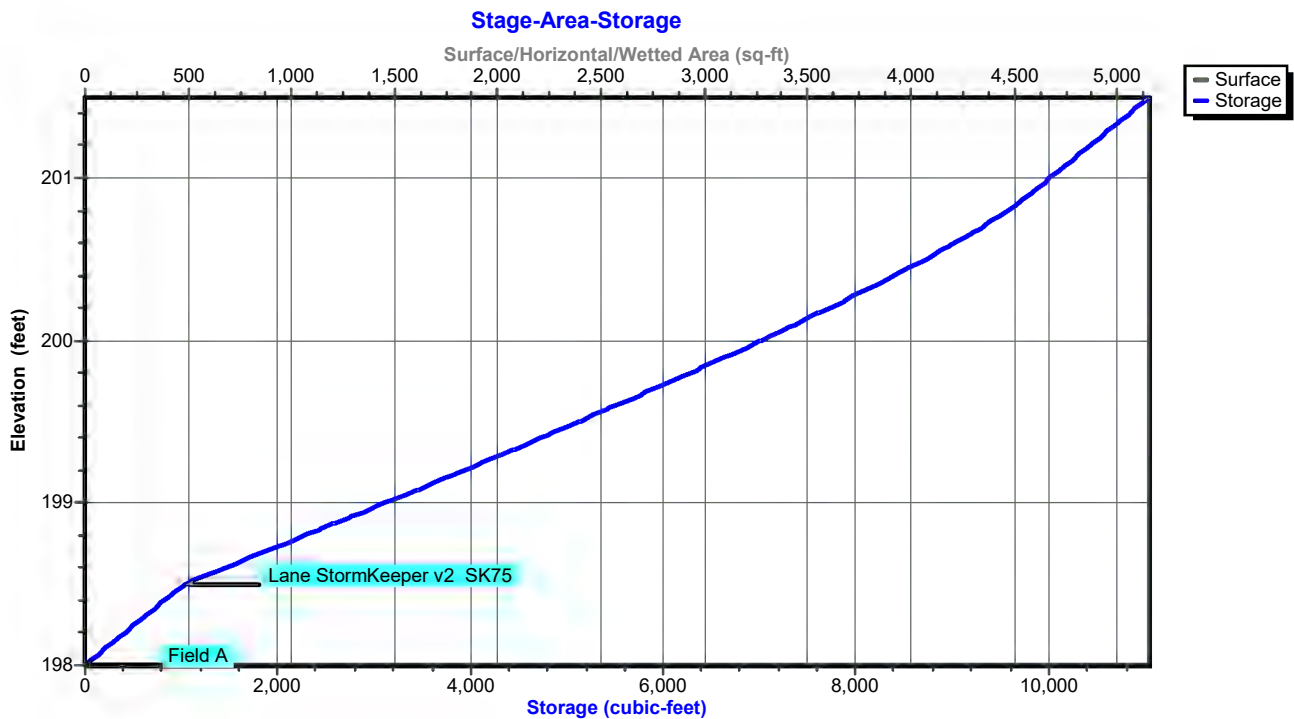
**Hydrograph for Subcatchment 3P: Undisturbed Managed**

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	104.00	7.87	7.39	0.00
2.00	0.18	0.02	0.01	106.00	7.87	7.39	0.00
4.00	0.39	0.13	0.02	108.00	7.87	7.39	0.00
6.00	0.62	0.31	0.02	110.00	7.87	7.39	0.00
8.00	0.94	0.58	0.04	112.00	7.87	7.39	0.00
10.00	1.43	1.03	0.08	114.00	7.87	7.39	0.00
12.00	3.75	3.29	<b>1.20</b>	116.00	7.87	7.39	0.00
14.00	6.44	5.96	<b>0.09</b>	118.00	7.87	7.39	0.00
16.00	6.93	6.45	0.05	120.00	7.87	7.39	0.00
18.00	7.25	6.77	0.03				
20.00	7.48	7.01	0.03				
22.00	7.69	7.21	0.02				
24.00	<b>7.87</b>	<b>7.39</b>	0.02				
26.00	7.87	7.39	0.00				
28.00	7.87	7.39	0.00				
30.00	7.87	7.39	0.00				
32.00	7.87	7.39	0.00				
34.00	7.87	7.39	0.00				
36.00	7.87	7.39	0.00				
38.00	7.87	7.39	0.00				
40.00	7.87	7.39	0.00				
42.00	7.87	7.39	0.00				
44.00	7.87	7.39	0.00				
46.00	7.87	7.39	0.00				
48.00	7.87	7.39	0.00				
50.00	7.87	7.39	0.00				
52.00	7.87	7.39	0.00				
54.00	7.87	7.39	0.00				
56.00	7.87	7.39	0.00				
58.00	7.87	7.39	0.00				
60.00	7.87	7.39	0.00				
62.00	7.87	7.39	0.00				
64.00	7.87	7.39	0.00				
66.00	7.87	7.39	0.00				
68.00	7.87	7.39	0.00				
70.00	7.87	7.39	0.00				
72.00	7.87	7.39	0.00				
74.00	7.87	7.39	0.00				
76.00	7.87	7.39	0.00				
78.00	7.87	7.39	0.00				
80.00	7.87	7.39	0.00				
82.00	7.87	7.39	0.00				
84.00	7.87	7.39	0.00				
86.00	7.87	7.39	0.00				
88.00	7.87	7.39	0.00				
90.00	7.87	7.39	0.00				
92.00	7.87	7.39	0.00				
94.00	7.87	7.39	0.00				
96.00	7.87	7.39	0.00				
98.00	7.87	7.39	0.00				
100.00	7.87	7.39	0.00				
102.00	7.87	7.39	0.00				

### Pond 5P: Short - Stormkeeper Chamber



### Pond 5P: Short - Stormkeeper Chamber



**2025.08.04 - Noble Town Center - New System**

NOAA 24-hr C 100-Year Rainfall=7.87"

Prepared by Langan Engineering

Printed 8/5/2025

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**Hydrograph for Pond 5P: Short - Stormkeeper Chamber**

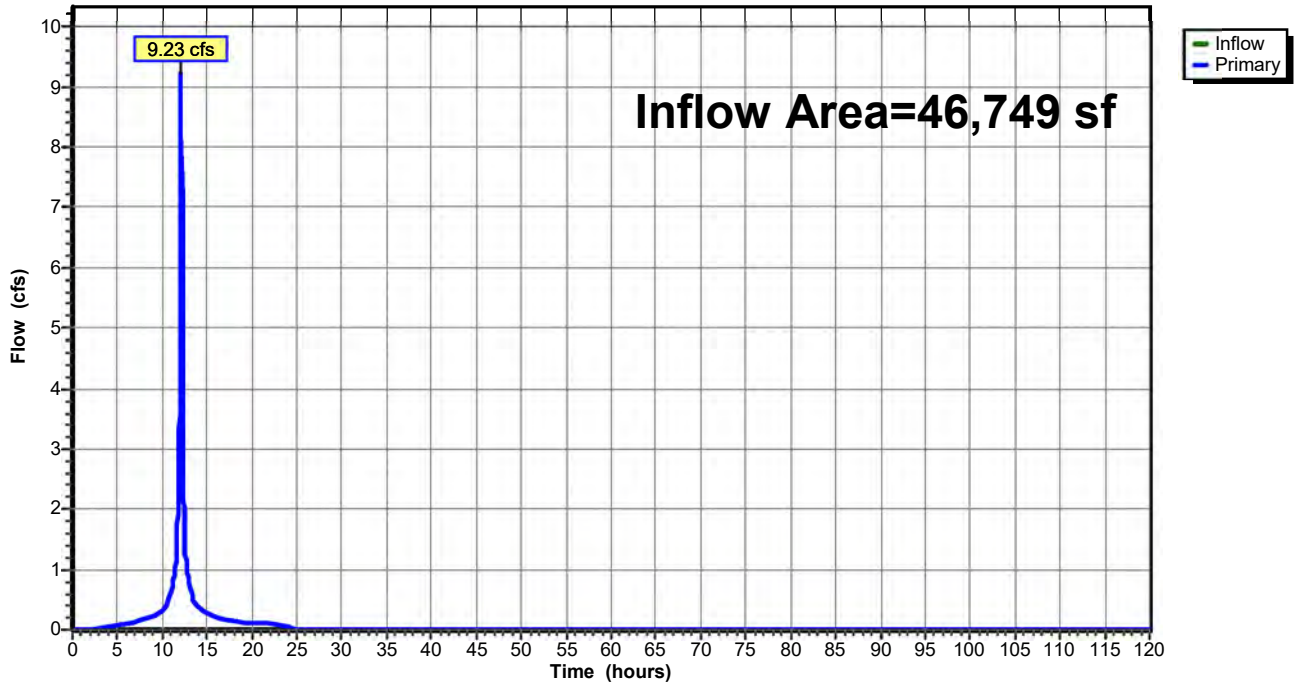
Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	198.00	0.00	<b>0.00</b>	0.00
5.00	0.08	290	198.14	0.03	<b>0.03</b>	0.00
10.00	<b>0.31</b>	<b>2,454</b>	<b>198.84</b>	<b>0.03</b>	0.03	<b>0.00</b>
15.00	<b>0.23</b>	<b>3,851</b>	<b>199.18</b>	<b>0.34</b>	0.03	<b>0.30</b>
20.00	0.11	3,237	199.03	0.12	0.03	0.09
25.00	0.00	2,878	198.94	0.05	0.03	0.02
30.00	0.00	2,230	198.79	0.03	0.03	0.00
35.00	0.00	1,629	198.64	0.03	0.03	0.00
40.00	0.00	1,028	198.50	0.03	0.03	0.00
45.00	0.00	426	198.21	0.03	0.03	0.00
50.00	0.00	2	198.00	0.00	0.00	0.00
55.00	0.00	0	198.00	0.00	0.00	0.00
60.00	0.00	0	198.00	0.00	0.00	0.00
65.00	0.00	0	198.00	0.00	0.00	0.00
70.00	0.00	0	198.00	0.00	0.00	0.00
75.00	0.00	0	198.00	0.00	0.00	0.00
80.00	0.00	0	198.00	0.00	0.00	0.00
85.00	0.00	0	198.00	0.00	0.00	0.00
90.00	0.00	0	198.00	0.00	0.00	0.00
95.00	0.00	0	198.00	0.00	0.00	0.00
100.00	0.00	0	198.00	0.00	0.00	0.00
105.00	0.00	0	198.00	0.00	0.00	0.00
110.00	0.00	0	198.00	0.00	0.00	0.00
115.00	0.00	0	198.00	0.00	0.00	0.00
120.00	0.00	0	198.00	0.00	0.00	0.00

**Stage-Area-Storage for Pond 5P: Short - Stormkeeper Chamber**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
198.00	5,154	0	200.60	5,154	9,027
198.05	5,154	103	200.65	5,154	9,173
198.10	5,154	206	200.70	5,154	9,312
198.15	5,154	309	200.75	5,154	9,444
198.20	5,154	412	200.80	5,154	9,569
198.25	5,154	515	200.85	5,154	9,688
198.30	5,154	618	200.90	5,154	9,802
198.35	5,154	722	200.95	5,154	9,910
198.40	5,154	825	201.00	5,154	10,015
198.45	5,154	928	201.05	5,154	10,118
198.50	5,154	1,031	201.10	5,154	10,221
198.55	5,154	1,242	201.15	5,154	10,324
198.60	5,154	1,452	201.20	5,154	10,427
198.65	5,154	1,662	201.25	5,154	10,530
198.70	5,154	1,872	201.30	5,154	10,633
198.75	5,154	2,080	201.35	5,154	10,736
198.80	5,154	2,289	201.40	5,154	10,839
198.85	5,154	2,496	201.45	5,154	10,943
198.90	5,154	2,703	201.50	5,154	11,046
198.95	5,154	2,909			
199.00	5,154	3,114			
199.05	5,154	3,319			
199.10	5,154	3,523			
199.15	5,154	3,726			
199.20	5,154	3,928			
199.25	5,154	4,129			
199.30	5,154	4,329			
199.35	5,154	4,528			
199.40	5,154	4,727			
199.45	5,154	4,924			
199.50	5,154	5,120			
199.55	5,154	5,315			
199.60	5,154	5,509			
199.65	5,154	5,702			
199.70	5,154	5,894			
199.75	5,154	6,084			
199.80	5,154	6,273			
199.85	5,154	6,460			
199.90	5,154	6,646			
199.95	5,154	6,830			
200.00	5,154	7,012			
200.05	5,154	7,193			
200.10	5,154	7,372			
200.15	5,154	7,549			
200.20	5,154	7,724			
200.25	5,154	7,896			
200.30	5,154	8,067			
200.35	5,154	8,235			
200.40	5,154	8,400			
200.45	5,154	8,562			
200.50	5,154	8,721			
200.55	5,154	8,876			

### Pond E: POA-1-E

#### Hydrograph

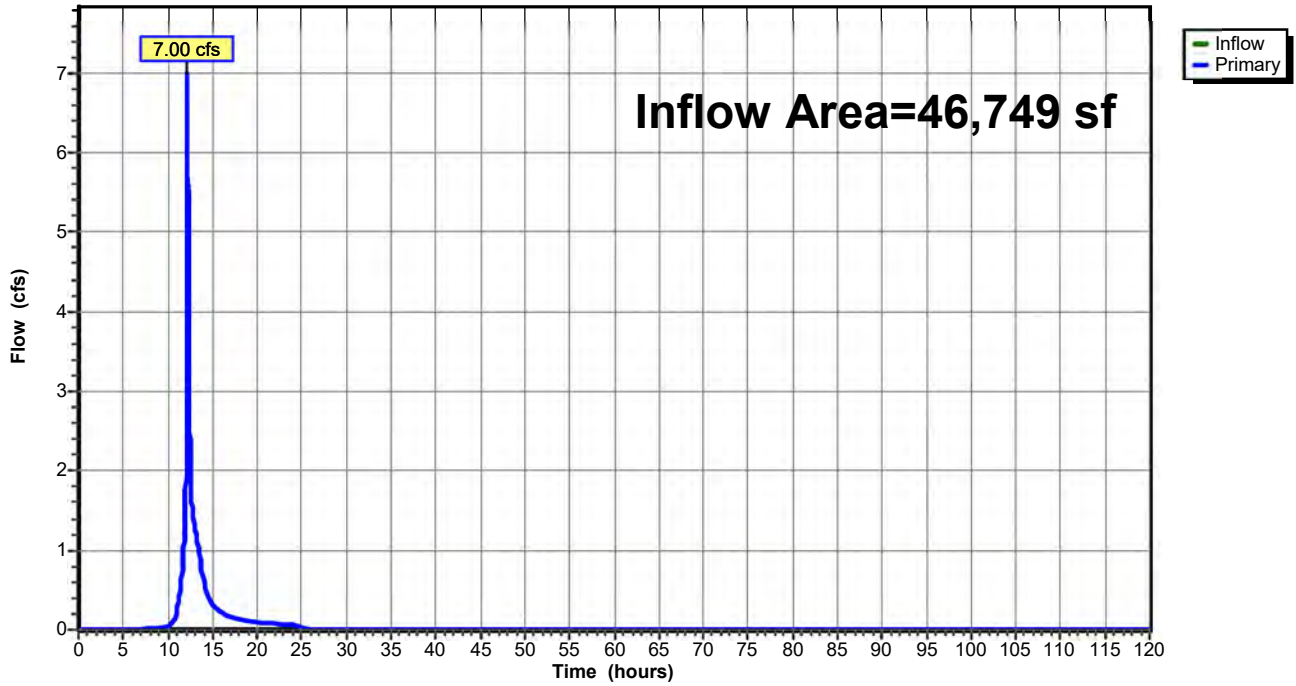


**Hydrograph for Pond E: POA-1-E**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	104.00	0.00		0.00
2.00	0.02		0.02	106.00	0.00		0.00
4.00	0.06		0.06	108.00	0.00		0.00
6.00	0.10		0.10	110.00	0.00		0.00
8.00	0.17		0.17	112.00	0.00		0.00
10.00	0.33		0.33	114.00	0.00		0.00
12.00	<b>5.28</b>		<b>5.28</b>	116.00	0.00		0.00
14.00	<b>0.38</b>		<b>0.38</b>	118.00	0.00		0.00
16.00	0.21		0.21	120.00	0.00		0.00
18.00	0.14		0.14				
20.00	0.12		0.12				
22.00	0.10		0.10				
24.00	0.10		0.10				
26.00	0.00		0.00				
28.00	0.00		0.00				
30.00	0.00		0.00				
32.00	0.00		0.00				
34.00	0.00		0.00				
36.00	0.00		0.00				
38.00	0.00		0.00				
40.00	0.00		0.00				
42.00	0.00		0.00				
44.00	0.00		0.00				
46.00	0.00		0.00				
48.00	0.00		0.00				
50.00	0.00		0.00				
52.00	0.00		0.00				
54.00	0.00		0.00				
56.00	0.00		0.00				
58.00	0.00		0.00				
60.00	0.00		0.00				
62.00	0.00		0.00				
64.00	0.00		0.00				
66.00	0.00		0.00				
68.00	0.00		0.00				
70.00	0.00		0.00				
72.00	0.00		0.00				
74.00	0.00		0.00				
76.00	0.00		0.00				
78.00	0.00		0.00				
80.00	0.00		0.00				
82.00	0.00		0.00				
84.00	0.00		0.00				
86.00	0.00		0.00				
88.00	0.00		0.00				
90.00	0.00		0.00				
92.00	0.00		0.00				
94.00	0.00		0.00				
96.00	0.00		0.00				
98.00	0.00		0.00				
100.00	0.00		0.00				
102.00	0.00		0.00				

### Pond P: POA-1-P

#### Hydrograph



**Hydrograph for Pond P: POA-1-P**

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	104.00	0.00		0.00
2.00	0.00		0.00	106.00	0.00		0.00
4.00	0.00		0.00	108.00	0.00		0.00
6.00	0.01		0.01	110.00	0.00		0.00
8.00	0.01		0.01	112.00	0.00		0.00
10.00	0.03		0.03	114.00	0.00		0.00
12.00	<b>1.80</b>		<b>1.80</b>	116.00	0.00		0.00
14.00	<b>0.61</b>		<b>0.61</b>	118.00	0.00		0.00
16.00	0.22		0.22	120.00	0.00		0.00
18.00	0.14		0.14				
20.00	0.10		0.10				
22.00	0.08		0.08				
24.00	0.07		0.07				
26.00	0.00		0.00				
28.00	0.00		0.00				
30.00	0.00		0.00				
32.00	0.00		0.00				
34.00	0.00		0.00				
36.00	0.00		0.00				
38.00	0.00		0.00				
40.00	0.00		0.00				
42.00	0.00		0.00				
44.00	0.00		0.00				
46.00	0.00		0.00				
48.00	0.00		0.00				
50.00	0.00		0.00				
52.00	0.00		0.00				
54.00	0.00		0.00				
56.00	0.00		0.00				
58.00	0.00		0.00				
60.00	0.00		0.00				
62.00	0.00		0.00				
64.00	0.00		0.00				
66.00	0.00		0.00				
68.00	0.00		0.00				
70.00	0.00		0.00				
72.00	0.00		0.00				
74.00	0.00		0.00				
76.00	0.00		0.00				
78.00	0.00		0.00				
80.00	0.00		0.00				
82.00	0.00		0.00				
84.00	0.00		0.00				
86.00	0.00		0.00				
88.00	0.00		0.00				
90.00	0.00		0.00				
92.00	0.00		0.00				
94.00	0.00		0.00				
96.00	0.00		0.00				
98.00	0.00		0.00				
100.00	0.00		0.00				
102.00	0.00		0.00				

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- 37 Pond 5P: Short - Stormkeeper Chamber
- 40 Pond E: POA-1-E
- 42 Pond P: POA-1-P

**5-Year Event**

- 44 Subcat 1E: Disturbed Managed
- 46 Subcat 1P: Disturbed Managed
- 48 Subcat 2E: Disturbed Unmanaged
- 50 Subcat 2P: Disturbed Unmanaged
- 52 Subcat 3E: Undisturbed Managed
- 54 Subcat 3P: Undisturbed Managed
- 56 Pond 5P: Short - Stormkeeper Chamber
- 59 Pond E: POA-1-E
- 61 Pond P: POA-1-P

**10-Year Event**

- 63 Subcat 1E: Disturbed Managed
- 65 Subcat 1P: Disturbed Managed
- 67 Subcat 2E: Disturbed Unmanaged
- 69 Subcat 2P: Disturbed Unmanaged
- 71 Subcat 3E: Undisturbed Managed

## 2025.08.04 - Noble Town Center - New System

Prepared by Langan Engineering

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Printed 8/5/2025

- 73 Subcat 3P: Undisturbed Managed
- 75 Pond 5P: Short - Stormkeeper Chamber
- 78 Pond E: POA-1-E
- 80 Pond P: POA-1-P

### **25-Year Event**

- 82 Subcat 1E: Disturbed Managed
- 84 Subcat 1P: Disturbed Managed
- 86 Subcat 2E: Disturbed Unmanaged
- 88 Subcat 2P: Disturbed Unmanaged
- 90 Subcat 3E: Undisturbed Managed
- 92 Subcat 3P: Undisturbed Managed
- 94 Pond 5P: Short - Stormkeeper Chamber
- 97 Pond E: POA-1-E
- 99 Pond P: POA-1-P

### **50-Year Event**

- 101 Subcat 1E: Disturbed Managed
- 103 Subcat 1P: Disturbed Managed
- 105 Subcat 2E: Disturbed Unmanaged
- 107 Subcat 2P: Disturbed Unmanaged
- 109 Subcat 3E: Undisturbed Managed
- 111 Subcat 3P: Undisturbed Managed
- 113 Pond 5P: Short - Stormkeeper Chamber
- 116 Pond E: POA-1-E
- 118 Pond P: POA-1-P

### **100-Year Event**

- 120 Subcat 1E: Disturbed Managed
- 122 Subcat 1P: Disturbed Managed
- 124 Subcat 2E: Disturbed Unmanaged
- 126 Subcat 2P: Disturbed Unmanaged
- 128 Subcat 3E: Undisturbed Managed
- 130 Subcat 3P: Undisturbed Managed
- 132 Pond 5P: Short - Stormkeeper Chamber
- 135 Pond E: POA-1-E
- 137 Pond P: POA-1-P

**APPENDIX C**  
**STORMWATER PIPE CAPACITY**  
**CALCULATIONS**



# Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



# Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	79.424	-21.322	Comb	0.00	0.71	0.85	6.0	198.00	3.15	200.50	15	Cir	0.010	1.00	204.00	CB-1 TO BASIN
2	End	22.694	140.756	Comb	0.00	0.27	0.84	6.0	198.00	3.30	198.75	15	Cir	0.010	1.00	202.75	CB-2 TO BASIN
3	End	54.843	127.853	Comb	0.00	0.70	0.86	6.0	195.97	0.97	196.50	15	Cir	0.010	1.00	201.50	CB-3 TO EXISTING
4	End	42.181	-107.761	Comb	0.00	0.16	0.94	6.0	195.40	1.90	196.20	15	Cir	0.010	1.00	206.50	CB-4 TO EXISTING
5	End	106.223	163.807	MH	1.54	0.00	0.00	6.0	193.50	4.24	198.00	15	Cir	0.010	1.00	205.31	OCS-1 TO MH-1

Project File: 2025.08.05 - South Parking Network.stm

Number of lines: 5

Date: 8/5/2025

# Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
1	CB-1	Combination	204.00	Rect	2.00	4.00	15	Cir	200.50			
2	CB-2	Combination	202.75	Rect	2.00	4.00	15	Cir	198.75			
3	CB-3	Combination	201.50	Rect	2.00	4.00	15	Cir	196.50			
4	CB-4	Combination	206.50	Rect	2.00	4.00	15	Cir	196.20			
5	OCS-1	Manhole	205.31	Cir	4.00	4.00	15	Cir	198.00			

Project File: 2025.08.05 - South Parking Network.stm

Number of Structures: 5

Run Date: 8/5/2025

# Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	CB-1 TO BASIN	3.93	15	Cir	79.424	198.00	200.50	3.148	198.80	201.30	0.35	201.30	End	Combination
2	CB-2 TO BASIN	1.48	15	Cir	22.694	198.00	198.75	3.305	198.48	199.23	n/a	199.23	End	Combination
3	CB-3 TO EXISTING	3.92	15	Cir	54.843	195.97	196.50	0.966	196.77	197.30	0.35	197.30	End	Combination
4	CB-4 TO EXISTING	0.98	15	Cir	42.181	195.40	196.20	1.897	195.79	196.59	n/a	196.59	End	Combination
5	OCS-1 TO MH-1	1.54	15	Cir	106.223	193.50	198.00	4.236	193.99	198.49	n/a	198.49	End	Manhole

Project File: 2025.08.05 - South Parking Network.stm

Number of lines: 5

Run Date: 8/5/2025

NOTES: Return period = 10 Yrs.

# Hydraulic Grade Line Computations

Line (1)	Size (in) (2)	Q (cfs) (3)	Downstream								Len (ft) (12)	Upstream								Check		JL coeff (K) (23)	Minor loss (ft) (24)
			Invert elev (ft) (4)	HGL elev (ft) (5)	Depth (ft) (6)	Area (sqft) (7)	Vel (ft/s) (8)	Vel head (ft) (9)	EGL elev (ft) (10)	Sf (%) (11)		Invert elev (ft) (13)	HGL elev (ft) (14)	Depth (ft) (15)	Area (sqft) (16)	Vel (ft/s) (17)	Vel head (ft) (18)	EGL elev (ft) (19)	Sf (%) (20)	Ave Sf (%) (21)	Enrgy loss (ft) (22)		
1	15	3.93	198.00	198.80	0.80	0.83	4.73	0.35	199.15	0.000	79.424	200.50	201.30	0.80**	0.83	4.73	0.35	201.65	0.000	0.000	n/a	1.00	0.35
2	15	1.48	198.00	198.48	0.48*	0.43	3.40	0.18	198.66	0.000	22.694	198.75	199.23	0.48**	0.43	3.40	0.18	199.41	0.000	0.000	n/a	1.00	n/a
3	15	3.92	195.97	196.77	0.80*	0.83	4.72	0.35	197.12	0.000	54.843	196.50	197.30	0.80**	0.83	4.72	0.35	197.65	0.000	0.000	n/a	1.00	0.35
4	15	0.98	195.40	195.79	0.39*	0.33	3.01	0.14	195.93	0.000	42.181	196.20	196.59	0.39**	0.33	3.01	0.14	196.73	0.000	0.000	n/a	1.00	n/a
5	15	1.54	193.50	193.99	0.49*	0.45	3.44	0.18	194.18	0.000	106.223	198.00	198.49	0.49**	0.45	3.44	0.18	198.68	0.000	0.000	n/a	1.00	n/a

Project File: 2025.08.05 - South Parking Network.stm

Number of lines: 5

Run Date: 8/5/2025

Notes: \* depth assumed; \*\* Critical depth. ; c = cir e = ellip b = box

## General Procedure:

Hydraflow computes the HGL using the Bernoulli energy equation. Manning's equation is used to determine energy losses due to pipe friction. In a standard step, iterative procedure, Hydraflow assumes upstream HGLs until the energy equation balances. If the energy equation cannot balance, supercritical flow exists and critical depth is temporarily assumed at the upstream end. A supercritical flow Profile is then computed using the same procedure in a downstream direction using momentum principles.

Col. 1 The line number being computed. Calculations begin at Line 1 and proceed upstream.

Col. 2 The line size. In the case of non-circular pipes, the line rise is printed above the span.

Col. 3 Total flow rate in the line.

Col. 4 The elevation of the downstream invert.

Col. 5 Elevation of the hydraulic grade line at the downstream end. This is computed as the upstream HGL + Minor loss of this line's downstream line.

Col. 6 The downstream depth of flow inside the pipe (HGL - Invert elevation) but not greater than the line size.

Col. 7 Cross-sectional area of the flow at the downstream end.

Col. 8 The velocity of the flow at the downstream end, (Col. 3 / Col. 7).

Col. 9 Velocity head (Velocity squared / 2g).

Col. 10 The elevation of the energy grade line at the downstream end, HGL + Velocity head, (Col. 5 + Col. 9).

Col. 11 The friction slope at the downstream end (the S or Slope term in Manning's equation).

Col. 12 The line length.

Col. 13 The elevation of the upstream invert.

Col. 14 Elevation of the hydraulic grade line at the upstream end.

Col. 15 The upstream depth of flow inside the pipe (HGL - Invert elevation) but not greater than the line size.

Col. 16 Cross-sectional area of the flow at the upstream end.

Col. 17 The velocity of the flow at the upstream end, (Col. 3 / Col. 16).

Col. 18 Velocity head (Velocity squared / 2g).

Col. 19 The elevation of the energy grade line at the upstream end, HGL + Velocity head, (Col. 14 + Col. 18) .

Col. 20 The friction slope at the upstream end (the S or Slope term in Manning's equation).

Col. 21 The average of the downstream and upstream friction slopes.

Col. 22 Energy loss. Average Sf/100 x Line Length (Col. 21/100 x Col. 12). Equals (EGL upstream - EGL downstream) +/- tolerance.

Col. 23 The junction loss coefficient (K).

Col. 24 Minor loss. (Col. 23 x Col. 18). Is added to upstream HGL and used as the starting HGL for the next upstream line(s).

# **ATTACHMENT A INFILTRATION TESTING REPORT**



28 May 2025

Eric Kelly  
Director of Construction  
Paramount Realty Services, Inc.  
1195 Route 70, Suite 2000  
Lakewood, NJ 08701

**RE: Infiltration Test Summary Report  
Noble Town Center Redevelopment  
901 Old York Road  
Jenkintown, Pennsylvania  
Langan Project No.: 220154401**

Eric:

This report summarizes our subsurface exploration, soil characterization and infiltration for the proposed redevelopment of the Noble Town Center at 901 Old York Road in Jenkintown. The purposes of this study were to:

- 1) review available soils information for the site,
- 2) excavate test pits to characterize the soils at the proposed underground stormwater management basin,
- 3) performing in situ infiltration tests,
- 4) perform laboratory particle-size analysis tests on soil samples collected from the infiltration tests.

We estimated elevations (el) shown on the test pit and infiltration test logs from the *Boundary and Topographic Survey* prepared by Langan (6 August 2024). Elevations are in reference to the North American Vertical Datum of 1988 (NAVD88).

## PROJECT OVERVIEW

### Existing Conditions

The site is located at 901 Old York Road in Jenkintown and is bounded by a commercial development on the north, parking lots on the east, a parking lot and commercial building beyond which is The Fairway on the south, and a commercial building beyond which is Old York Road on the west. Figure 1 shows the site location.

The site is occupied by an about 76,000-square-foot, three-story building surrounded by asphalt parking areas and driveways. Two loading docks are on the north side of the building. The building has a ground floor finished floor elevation (FFE) of about 209.8 feet and a 1<sup>st</sup> floor FFE of about 227 feet. Vehicle entrances to the parking lot are from The Fairway on the south and Old York Road on the east.

Site grades slope gently from a high point of about elevation (el) 240 feet at the northwest corner down to about el 195 feet on the south side and about el 200 feet in the east corner of the site.

## **Proposed Development**

We understand that the proposed development includes renovating the existing building into four tenant spaces with one common area and constructing an underground infiltration stormwater management basin in the parking lot to the south of the building. The stormwater management basin will have a footprint of about 5,400 square feet and the basin bottom will be at about el 197 feet. Parking lot surface grades in the area of the stormwater management basin are from about el 199 to 202 feet. Excavations of about 2 to 5 feet will be needed to construct the stormwater management basin. Figure 2 shows the footprint of the proposed basin.

## **REVIEW OF AVAILABLE INFORMATION**

We reviewed soil survey, geology, and the FEMA flood-insurance rate maps for the site. Pertinent information obtained from our review is summarized in the following sections.

### **Soil Survey**

According to the United States Department of Agriculture (USDA) National Resources Conservation Service (NRCS) Soil Survey map for Montgomery County, Pennsylvania (available online), the site is underlain by Urban Land (UgB, UgD). According to the USDA, more than 90% of Urban Land is covered by asphalt, concrete, buildings, or other impervious surfaces underlain by disturbed and natural soils. Urban Land does not have a hydrologic soil group rating.

### **Bedrock Geology**

According to the Geologic Map of Pennsylvania (Berg, 1980)<sup>1</sup> (Figure 3), the site is underlain by Felsic Gneiss formation. This formation consists of fine to medium grained, weakly to strongly foliated gneiss. Gneiss is a metamorphic rock that is formed when granite or shale are subjected to intense heat and pressure. The geologic contact with the Wissahickon formation is just south of the site. The Wissahickon formation consists of mica schist. Schist is also a metamorphic rock; however, gneiss has been subjected to higher temperatures and pressures than schist.

We encountered excavator bucket refusal on possible bedrock at about el 193.5 feet (below the proposed bottom of basin) at test pit TP-2.

### **FEMA Flood Rate Insurance Map**

According to the Federal Emergency Management Agency (FEMA) flood insurance rate map (FIRM) panel 42091C0401G (effective 2 March 2016) (available online), the site is outside the area of 1% annual chance of flood (100-year flood) and the area of 0.2% annual chance of flood (500-year flood).

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<sup>1</sup> Berg, T.M., Edmunds, W.E., Geyer, A.R., and others, 1980, "Geologic Map of Pennsylvania" (2<sup>nd</sup> ed.): Pennsylvania Geologic Survey, Map 1, Scale 1:250,000.

## SUBSURFACE EXPLORATION

Our field exploration consisted of three characterization test pits (TP-1 through TP-3) and in situ double ring infiltration tests (INF-1 through INF-3). Figure 2 shows the locations of the characterization test pits.

### Soil Characterization Test Pits

- Date: 3 April 2025
- Quantity: three test pits
- Locations: within the footprint of the proposed stormwater management basin
- Depths: About 6.2 to 8.5 feet deep.
- Excavation Contractor: Lyons & Hohl Site Contractors
- Excavator: John Deere 160G Excavator
- Engineering Oversight: Langan provided full-time observation of the test pits. Our field engineers examined and classified the encountered soil, recorded subsurface conditions, obtained soil samples, and prepared the test pit logs.
- Backfill: All test pits were backfilled in lifts using excavated soil tamped with the bucket of the excavator to about 3 to 4 feet below the ground surface. The remainder of the test pit was backfilled with lifts of PennDOT 2A aggregate tamped with a vibratory plate compactor.

The test pit logs indicate the primary soil type in capital letters (i.e., SAND, SILT, CLAY, GRAVEL). The following terms on the logs describe the approximate percent of the minor material constituents in the samples:

- "trace" = 1% to 10%
- "some" = > 10% to 30%
- "y" modifier (silty, clayey, sandy, gravelly) = >30% to 50%

Attached Table 1 provides a summary of the test pits. Attachment A includes the test pit logs with descriptions of the soils encountered and Attachment B includes photographs of the test pits.

### Double-Ring Infiltration Tests

- Date of Tests: 3 April 2025
- Number of Tests: three infiltration tests
- Locations: Offset about 2 to 3 feet from the soil characterization test pits, which were excavated first.
- Depths: About 2.7 to 4 feet deep.

- Test Description: We conducted the double-ring infiltration tests in general accordance with the procedure in the Pennsylvania Stormwater Best Management Practices Manual Appendix C – Site Evaluation and Soil Testing (30 December 2006). A 6-inch-diameter inner ring and a 12-inch-diameter outer ring were driven into the test soil to about 3 inches below the test elevation. The test soil was pre-soaked in general accordance with the BMP manual.
- Engineering Oversight: Langan engineers conducted the double ring infiltration tests.

Attached Table 1 provides a summary of the infiltration test results and soil types, and Attachment C includes the double-ring infiltration test logs.

### **Laboratory Tests**

We collected soil samples from the depths where in situ infiltration tests were conducted. We sent these soil samples to a testing laboratory where the following tests were performed to confirm the field classifications:

- Particle-Size Analysis – Sieve [ASTM D6913] (3 tests)
- Particle-Size Analysis – Hydrometer [ASTM D7928] (3 tests)

Table 1 includes a summary of the laboratory test results, and Attachment D includes the laboratory test results.

### **SUBSURFACE CONDITIONS**

The subsurface conditions generally consisted of silt over sandy silt and silty sand. Subsurface strata shown on the logs and described below are based on the review of the available information and the conditions encountered in the test pits at the time of our exploration. Variations should be expected across the site.

#### **Asphalt**

All the test pits were performed in that asphalt parking are to the south of the existing building. Generally, the asphalt was about 3 inches thick and underlain by an about 4- to 6-inch-thick layer of aggregate subbase.

#### **Silt**

Beneath the aggregate subbase, all test pits encountered SILT. The silt was yellowish brown and included some medium to fine sand and trace amounts of gravel. The silt was about 1 to 2 feet thick. No infiltration tests were performed in the silt.

#### **Sandy Gravel**

In test pit TP-3, Sandy GRAVEL was encountered below the silt. The sandy gravel layer included some silt and sporadic cobbles and boulders up to 19 inches in size. This layer was encountered

at about 1.9 feet deep, corresponding to about el 197.1 feet, and was about 2.1 feet thick. None of the other test pits encountered sandy gravel.

Infiltration test INF-3 was performed in the sandy gravel.

### **Silty Sand and Sandy Silt**

Below the silt in test pits TP-1 and TP-2 and below the sandy gravel in test pit TP-3, we encountered a layer of Silty SAND and Sandy SILT with varying amounts of gravel, cobbles, and boulders. The silty sand and sandy silt was encountered from about 1.8 to 4 feet deep, corresponding to el 195 to 198.4 feet. All test pits were terminated in this stratum. TP-2 was terminated at refusal of the excavator bucket at 6.2 feet deep on possible bedrock or a boulder.

Infiltration tests INF-1 and INF-2 were performed in the silty sand and sandy silt.

### **Groundwater**

We did not encounter groundwater or indicators of seasonal high groundwater in our test pits. Groundwater was not encountered in our test pits. These observations represent the groundwater condition at the time of the exploration only. Groundwater should be expected to fluctuate with the seasons, weather, and climate change.

### **KEY FINDINGS**

The key findings from our exploration and infiltration tests are:

- The contractor should expect to encounter cobbles, boulders and difficult excavation during excavation of the stormwater management basin
- Refusal of the excavator bucket was encountered in at test pit TP-2 at about 6.2 feet deep, corresponding to about el 193.5 feet. In general, the John Deere 160G excavator was able to easily advance through the upper silt but began having difficulty when cobbles and boulders were encountered. The excavation difficulty and depth to excavator refusal is based on a John Deere 160G excavator. The contractor should review the conditions and make their own conclusions regarding the type and size of equipment that will be needed for excavations.
- Low infiltration rates (less than 1 inch per hour) were measured in test pits TP-1 and TP-2 infiltration tests performed. The low infiltration rates at the site are likely from the high percentages (>30%) of silt and clay.

### **LIMITATIONS**

The conclusions provided in this report result from our interpretation of the geotechnical conditions existing at the site inferred from a limited number of test pits and infiltration tests. Actual subsurface conditions may vary.

Any proposed changes in stormwater management facilities or their locations should be brought to our attention as soon as possible so that we can determine whether such changes affect our

conclusions. Information on subsurface strata and groundwater levels shown on the logs represent conditions encountered only at the locations indicated and at the time of exploration. If different conditions are encountered during construction, they should immediately be brought to our attention for evaluation.

This report has been prepared to assist the owner and Langan (the civil engineer) in the design process and is only applicable to the design of the specific project identified. The information in this report cannot be utilized or depended on by engineers or contractors who are involved in evaluations or designs of facilities (including underpinning, grouting, stabilization, etc.) on adjacent properties which are beyond the limits of that which is the specific subject of this report.

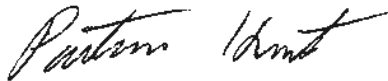
Environmental issues (such as permitting or potentially contaminated soil and groundwater) are outside the scope of this study and should be addressed in a separate evaluation.

## CLOSURE

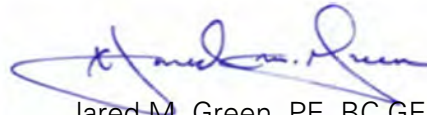
We completed three test pits and three infiltration tests and laboratory tests on soils within the proposed stormwater management basin. If you would like to discuss the subsurface conditions or test results in more detail, please contact us.

Sincerely,

**Langan Engineering and Environmental Services, LLC**



Patrick Houston  
Project Engineer



Jared M. Green, PE, BC.GE  
Principal/Vice President

Enclosures: Table 1 – Test Pit and Infiltration Test Summary Table  
Figures  
Attachment A – Test Pit Logs  
Attachment B – Test Pit Photos  
Attachment C – Double-Ring Infiltration Test Logs  
Attachment D – Laboratory Test Results

cc: B. Conlon

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# TABLES

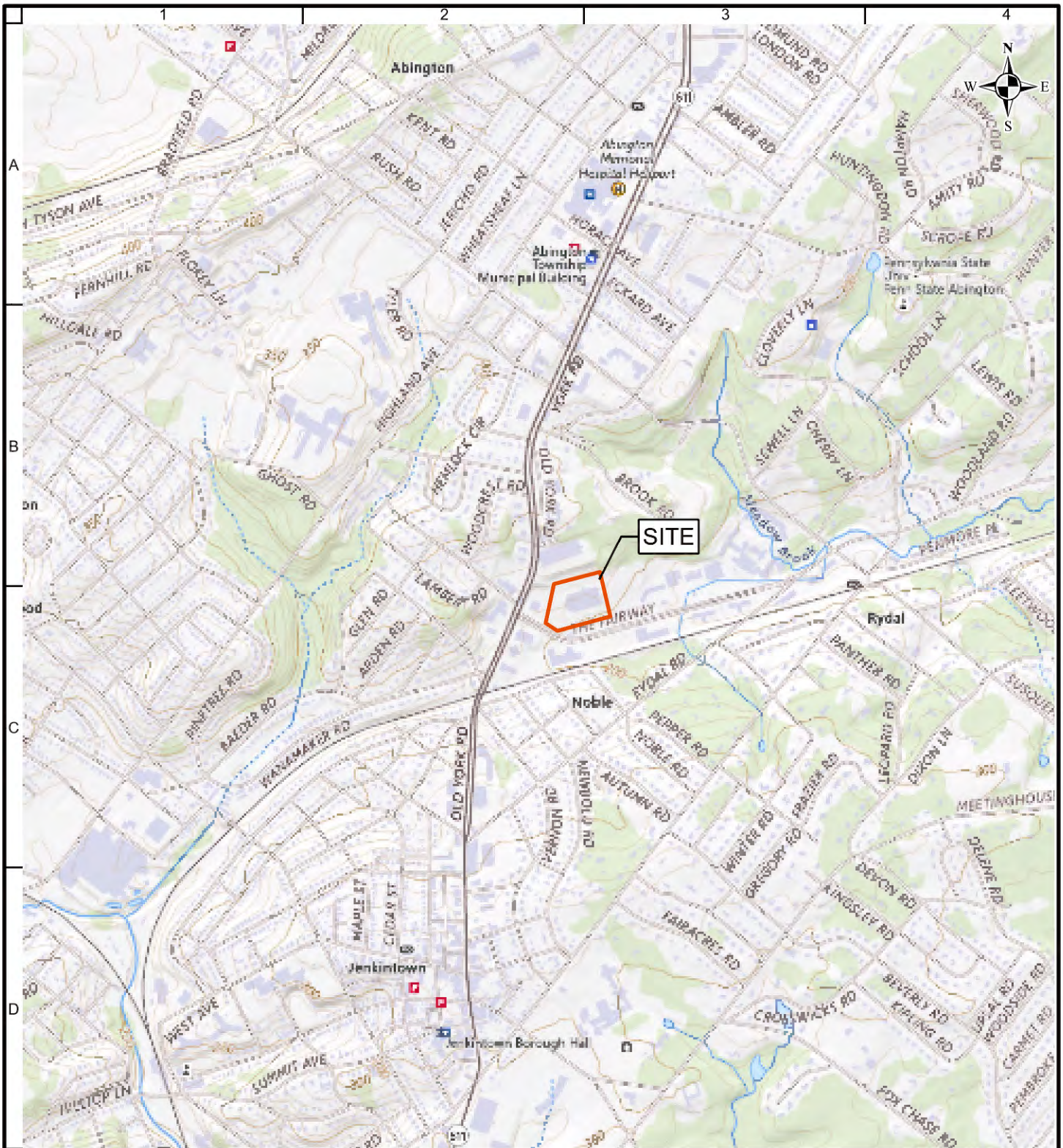
TABLE 1  
 Test Pit and  
 Infiltration Test Summary

Test Pit Location	Test ID	Test Pit Date	Test Pit Completion Depth (feet)	Depth to Groundwater (feet)	Depth to SHGW <sup>2</sup> Mottling (feet)	Depth to Refusal (feet)	Ground Surface Elevation (feet)	Groundwater Elevation (feet)	SHGW Elevation (feet)	Refusal Elevation (feet)	DRI Test Depth (feet)	DRI Test Elevation (Feet)	Field Intake Rate (inch/hour)	% Silt and Clay	USDA Classification
TP-1	INF-1	4/3/2025	8.0	N/E <sup>1</sup>	N/E	N/E	201.0	-	-	-	4.0	197.0	0.8	42	Sandy Loam
TP-2	INF-2	4/3/2025	6.2	N/E	N/E	6.2	199.7	-	-	193.5	2.7	197.0	0.4	39	Gravelly Loam
TP-3	INF-3	4/3/2025	8.5	N/E	N/E	N/E	199.0	-	-	-	3.0	196.0	18.4	24	Very Gravelly Sandy Loam

<sup>1</sup>N/E = Not Encountered

<sup>2</sup>SHGW = Seasonal High Groundwater

# FIGURES



**Legend**

 Site Boundary



NOTES:  
 1. BASEMAP ADAPTED FROM UNITED STATES GEOLOGICAL SURVEY (USGS) 7.5-MINUTE SERIES TOPOGRAPHICAL MAPS, FRANKFORD, PENNSYLVANIA, QUADRANGLE, DATED 2016.

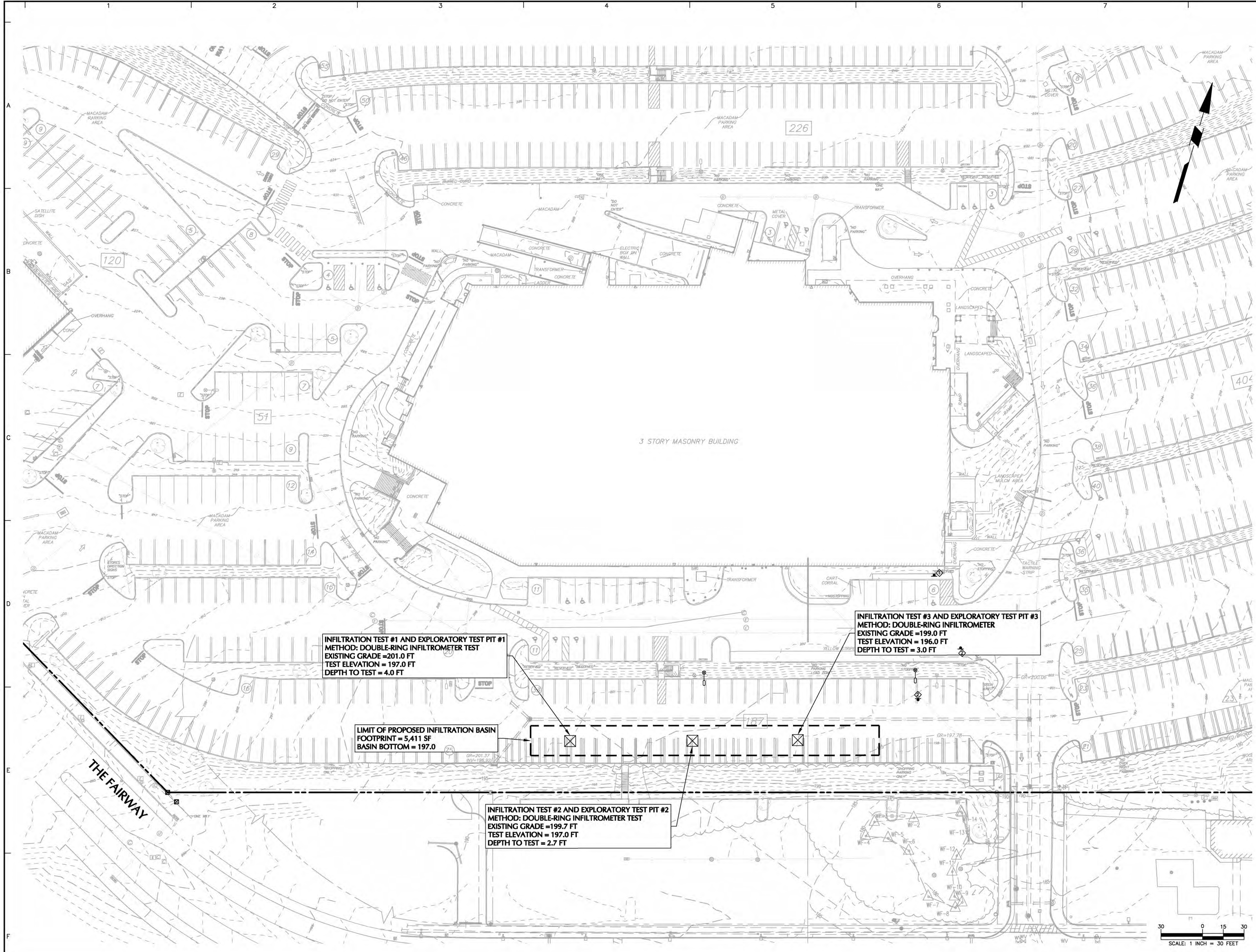
**LANGAN**  
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Project  
**NOBLE TOWN CENTER**  
 ABINGTON  
 MONTGOMERY COUNTY PENNSYLVANIA

Figure Title  
**SITE LOCATION MAP**

Project No. 220154401  
 Date 5/28/2025  
 Scale 1"=2,000'  
 Drawn By JF

Figure No. 1



**LEGEND**

- INFILTRATION AND SOIL CHARACTERIZATION TEST PIT
- PROPOSED BASIN FOOTPRINT

- NOTES**
1. THE BASE PLAN FOR THIS DRAWING WAS TAKEN FROM "BOUNDARY AND TOPOGRAPHIC SURVEY" PREPARED BY LANGAN ON 6 AUGUST 2024.
  2. LANGAN TEST PITS AND INFILTRATION TESTS WERE LOCATED IN THE FIELD USING EXISTING SITE FEATURES. ALL LOCATIONS ARE APPROXIMATE.
  3. TEST PITS WERE PERFORMED ON 3 APRIL 2025 BY LYONS & HOHL SITE CONTRACTORS UNDER THE FULL-TIME OBSERVATION OF A LANGAN ENGINEER.

INFILTRATION TEST #1 AND EXPLORATORY TEST PIT #1  
 METHOD: DOUBLE-RING INFILTRMETER TEST  
 EXISTING GRADE = 201.0 FT  
 TEST ELEVATION = 197.0 FT  
 DEPTH TO TEST = 4.0 FT

INFILTRATION TEST #3 AND EXPLORATORY TEST PIT #3  
 METHOD: DOUBLE-RING INFILTRMETER  
 EXISTING GRADE = 199.0 FT  
 TEST ELEVATION = 196.0 FT  
 DEPTH TO TEST = 3.0 FT

LIMIT OF PROPOSED INFILTRATION BASIN  
 FOOTPRINT = 5,411 SF  
 BASIN BOTTOM = 197.0

INFILTRATION TEST #2 AND EXPLORATORY TEST PIT #2  
 METHOD: DOUBLE-RING INFILTRMETER TEST  
 EXISTING GRADE = 199.7 FT  
 TEST ELEVATION = 197.0 FT  
 DEPTH TO TEST = 2.7 FT

**LANGAN**  
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Project  
**NOBLE TOWN CENTER REDEVELOPMENT - SOUTH PARKING**  
 ABINGTON TOWNSHIP  
 MONTGOMERY COUNTY PENNSYLVANIA

Drawing Title  
**SUBSURFACE EXPLORATION PLAN**

Project No. <b>220154401</b>	Drawing No. <b>2</b>
Date <b>5/28/2025</b>	
Drawn By <b>KN</b>	
Checked By <b>PH</b>	
Sheet 1 of 1	

SCALE: 1 INCH = 30 FEET



**Legend**

- Site Boundary
- Xw - Wissahickon Formation
- fgp - Felsic gneiss

**NOTES:**  
 1. AERIAL IMAGERY PROVIDED BY LANGAN'S SUBSCRIPTION TO NEARMAP.FLOWN, 2/22/2025.  
 2. BEDROCK GEOLOGY PROVIDED BY PADEP.

<p><b>LANGAN</b>          Langan Engineering and Environmental Services, LLC          1818 Market Street, Suite 3300          Philadelphia, PA 19103</p> <p>T: 215.845.8900 F: 215.845.8901 www.langan.com</p>	<p>Project</p> <p><b>NOBLE TOWN CENTER</b>          ABINGTON</p> <p>MONTGOMERY COUNTY PENNSYLVANIA</p>	<p>Figure Title</p> <p><b>BEDROCK GEOLOGY MAP</b></p>	<p>Project No. 220154401</p> <p>Date 5/28/2025</p> <p>Scale 1"=250'</p> <p>Drawn By JF</p>	<p>Figure No.</p> <p><b>3</b></p>
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# **ATTACHMENT A TEST PIT LOGS**



# LANGAN

Log of Test Pit **TP-1**

Sheet 1 of 1

Project Noble Town Center Redevelopment - South Parking		Project No. 220154401	Date 4/3/2025
Location 901 Old York Road, Jenkintown, PA		Elevation and Datum About el. 201.0 feet (NAVD88)	
Excavation Company Lyons & Hohl Site Contractors		Depth 8.0 ft	Water Level - First N/A ∇
Excavation Equipment John Deere 160G Excavator		Excavation Foreman Bob Spangler	Water Level - Completion N/A ▼
		Field Engineer Sary Nicolas	

SYMBOL	Elev. (ft)	DESCRIPTION	Depth Scale	SAMPLE		REMARKS
				Number	Type	
	+201.0		0			Start excavating at 11:40 AM on 4/3/2025
	+200.8	ASPHALT [About 3 inches thick]				
	+200.4	[10YR 5/1] Gray fine to coarse Sandy fine to coarse subangular GRAVEL, some silt (moist) [SUBBASE, about 4 inches thick]	1			Infiltration test performed at 4 ft deep.
		[10YR 5/6] Yellowish brown SILT, some fine to medium sand, trace fine to coarse subangular gravel, blocky to granular (moist)	2			
	+198.4	[2.5Y 4/4] Olive brown Silty fine to coarse SAND, trace fine to coarse subangular gravel, trace clay, sporadic cobbles and boulders up to 12 inches in diameter, granular (moist)	3			
			4	INF-1	BAG	
	+195.5	[2.5Y 4/4] Olive brown fine to coarse Sandy SILT, some fine to coarse subangular gravel, sporadic light gray angular platy cobbles and boulders up to 12 inches in diameter, granular (moist)	5			Bottom of test pit at 8 ft deep. Test pit backfilled with on-site soil and imported 2A aggregate. Backfill placed in lifts and compacted with a vibratory plate tamper.
			6			
			7			
	+193.0	End of Test Pit at 8.0ft.	8			
			9			
			10			
			11			
			12			
			13			
			14			
			15			
			16			
			17			
			18			
			19			
			20			

# LANGAN

Log of Test Pit **TP-2**

Sheet 1 of 1

Project Noble Town Center Redevelopment - South Parking		Project No. 220154401	Date 4/3/2025
Location 901 Old York Road, Jenkintown, PA		Elevation and Datum About el. 199.7 feet (NAVD88)	
Excavation Company Lyons & Hohl Site Contractors		Depth 6.2 ft	Water Level - First N/A $\nabla$
Excavation Equipment John Deere 160G Excavator		Excavation Foreman Bob Spangler	Water Level - Completion N/A $\blacktriangledown$
		Field Engineer Sary Nicolas	





SYMBOL	Elev. (ft)	DESCRIPTION	Depth Scale	SAMPLE		REMARKS
				Number	Type	
	+199.7		0			Start excavating at 10:15 AM on 4/3/2025
	+199.4	ASPHALT [About 3 inches thick]				
	+199.1	[10YR 5/1] Gray fine to coarse Sandy fine to coarse subangular GRAVEL (moist) [SUBBASE, about 4 inches thick]				
		[10YR 5/6] Yellowish brown SILT, some fine to medium sand, blocky (moist)	1			
	+197.9	[10YR 5/6] Yellowish brown fine to coarse SAND, some silt, some fine to coarse subangular gravel, some clay, cobbles and boulders up to 36 inches in diameter, granular (moist)	2			Infiltration test at performed at 2.7 ft deep.
			3	INF-2	BAG	
	+195.7	[2.5Y 5/3] Light olive brown Silty fine to coarse SAND, granular (moist)	4			Refusal of excavator bucket at 6.2 ft deep. Test pit backfilled with on-site soil and imported 2A aggregate. Backfill placed in lifts and and compacted with a vibratory plate tamper.
	+194.2	[10YR 7/6] Yellow Silty fine to coarse SAND, trace coarse subangular gravel, granular (moist)	5			
	+193.5	End of Test Pit at 6.2ft.	6			
			7			
			8			
			9			
			10			
			11			
			12			
			13			
			14			
			15			
			16			
			17			
			18			
			19			
			20			

# LANGAN

Log of Test Pit **TP-3**

Sheet 1 of 1

Project	Noble Town Center Redevelopment - South Parking	Project No.	220154401	Date	4/3/2025
Location	901 Old York Road, Jenkintown, PA	Elevation and Datum	About el. 199.0 feet (NAVD88)		
Excavation Company	Lyons & Hohl Site Contractors	Depth	8.5 ft	Water Level - First	N/A $\nabla$
				Water Level - Completion	N/A $\nabla$
Excavation Equipment	John Deere 160G Excavator	Excavation Foreman	Bob Spangler	Field Engineer	Sary Nicolas

SYMBOL	Elev. (ft)	DESCRIPTION	Depth Scale	SAMPLE		REMARKS
				Number	Type	
	+199.0		0			Start excavating at 8:54 AM on 4/3/2025
	+198.8	ASPHALT [About 3 inches thick]				
	+198.2	[10YR 5/1] Gray fine to coarse Sandy fine to coarse subangular GRAVEL (moist) [SUBBASE, about 6 inches thick]				
	+197.1	[10YR 5/6] Yellowish brown SILT, some fine sand, blocky (moist)				
	+195.0	[2.5Y 4/4] Olive brown coarse to fine Sandy coarse to fine GRAVEL, some silt, trace clay, angular platy cobbles and boulders up to 19 inches in diameter, granular (moist)				
	+195.0	[10 YR 4/6] Dark yellowish brown fine to coarse Sandy SILT, trace fine subangular gravel, blocky (moist)		INF-3	BAG	Infiltration test performed at 3 ft deep.
	+192.5	[10 YR 5/2] Grayish brown SILT, some fine sand, trace fine to coarse subangular gravel, blocky (moist)				
	+191.5	[10 YR 5/6] Yellowish brown SILT, some fine sand, blocky (moist)				
	+190.5	End of Test Pit at 8.5ft.				Bottom of test pit at 8.5 ft deep. Test pit backfilled with on-site soil and imported 2A aggregate. Backfill placed in lifts and compacted with a vibratory plate tamper.
			9			
			10			
			11			
			12			
			13			
			14			
			15			
			16			
			17			
			18			
			19			
			20			

**ATTACHMENT B  
TEST PIT PHOTOGRAPHS**



<b>Client Name:</b> Paramount Realty Services, Inc.	<b>Subject Property Location:</b> Noble Town Center Redevelopment – South Parking	<b>Project No.</b> 220154401
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<b>Date</b> April 3, 2025	<b>Photo No.</b> 1	
<b>Test Pit Location:</b>  TP-1		
<b>Description:</b>  General view of TP-1.  Refer to Figure 2 for approximate location of test pits.		

<b>Date</b> April 3, 2025	<b>Photo No.</b> 2	
<b>Test Pit Location:</b>  TP-2		
<b>Description:</b>  General view of TP-2.  Excavator bucket refusal at 6.2 feet deep.		

<b>Client Name:</b> Paramount Realty Services, Inc.	<b>Subject Property Location:</b> Noble Town Center Redevelopment – South Parking	<b>Project No.</b> 220154401
--	--	---------------------------------

<b>Date</b> April 3, 2025	<b>Photo No.</b> 3	
<b>Test Pit Location:</b> TP-2		
<b>Description:</b> Cobbles and boulders encountered in TP-2		

<b>Date</b> April 3, 2025	<b>Photo No.</b> 4	
<b>Test Pit Location:</b> TP-3		
<b>Description:</b> General view of TP-3.		

<b>Client Name:</b> Paramount Realty Services, Inc.	<b>Subject Property Location:</b> Noble Town Center Redevelopment – South Parking	<b>Project No.</b> 220154401
--	--	---------------------------------

<table border="1"><tr><td><b>Date</b> April 3, 2025</td><td><b>Photo No.</b> 5</td></tr></table>	<b>Date</b> April 3, 2025	<b>Photo No.</b> 5	
<b>Date</b> April 3, 2025	<b>Photo No.</b> 5		
<b>Test Pit Location:</b>  TP-3			
<b>Description:</b>  Platy angular cobbles and boulders encountered in TP-3			

# **ATTACHMENT C**

## **INFILTRATION TEST LOGS**



## INFILTRATION TEST No.: INF-01 @ TP-01

<b>Project No.:</b>	220154401	<b>Date:</b>	4/3/2025
<b>Project:</b>	Noble Town Center Redevelopment - South Parking	<b>Weather:</b>	Cloudy
<b>Location:</b>	901 Old York Road, Jenkintown, PA 19046	<b>Temperature:</b>	50s °F
<b>Client:</b>	Paramount Realty Services, Inc.	<b>Tested by:</b>	Sary Nicolas / Ed Fitzpatrick

<b>Test Method:</b>	Double-Ring Infiltration Test	<b>Surface Elevation:</b>	about 201 feet
<b>Instrument Diameter:</b>	6-inch diameter inner ring, 12-inch diameter outer ring	<b>Test Depth:</b>	about 4 feet
		<b>Test Elevation:</b>	about 197 feet (NAVD88)

Pre-Soak / Saturation	Time	Time Interval		Initial Water Level (inch)	Final Water Level (inch)	Drop in Water Level (inch)
		(minutes)	(seconds)			
	1:25 PM	30	0	5	4 5/8	3/8
	1:55 PM	30	0	5	4 5/8	3/8

Infiltration Test	Time	Time Interval		Initial Water Level (inch)	Final Water Level (inch)	Drop in Water Level (inch)	Field Intake Rate (inch/hour)
		(minutes)	(seconds)				
	2:27 PM	30	0	5	4 5/8	3/8	0.8
	2:57 PM	30	0	5	4 5/8	3/8	0.8
	3:27 PM	30	0	5	4 5/8	3/8	0.8
	3:57 PM	30	0	5	4 5/8	3/8	0.8
<b>Observed Field Intake Rate (inch/hour):</b>							0.8

**Comments:**  
 Grabbed sample INF-01 at about 4 feet below grade surface.

## INFILTRATION TEST No.: INF-02 @ TP-02

<b>Project No.:</b>	220154401	<b>Date:</b>	4/3/2025
<b>Project:</b>	Noble Town Center Redevelopment - South Parking	<b>Weather:</b>	Cloudy
<b>Location:</b>	901 Old York Road, Jenkintown, PA 19046	<b>Temperature:</b>	50s °F
<b>Client:</b>	Paramount Realty Services, Inc.	<b>Tested by:</b>	Sary Nicolas

<b>Test Method:</b>	Double-Ring Infiltration Test	<b>Surface Elevation:</b>	about 199.7 feet
<b>Instrument Diameter:</b>	6-inch diameter inner ring, 12-inch diameter outer ring	<b>Test Depth:</b>	about 2.7 feet
		<b>Test Elevation:</b>	about 197 feet (NAVD88)

Pre-Soak / Saturation	Time	Time Interval		Initial Water Level (inch)	Final Water Level (inch)	Drop in Water Level (inch)
		(minutes)	(seconds)			
	12:16 PM	30	0	6	5 13/16	3/16
	12:46 PM	30	0	6	5 13/16	3/16

Infiltration Test	Time	Time Interval		Initial Water Level (inch)	Final Water Level (inch)	Drop in Water Level (inch)	Field Intake Rate (inch/hour)
		(minutes)	(seconds)				
	1:27 PM	30	0	6	5 13/16	3/16	0.4
	1:57 PM	30	0	6	5 13/16	3/16	0.4
	2:27 PM	30	0	6	5 13/16	3/16	0.4
	2:57 PM	30	0	6	5 13/16	3/16	0.4
<b>Observed Field Intake Rate (inch/hour):</b>							0.4

**Comments:**  
 Grabbed sample INF-02 at about 2.7 feet below grade surface.

## INFILTRATION TEST No.: INF-03 @ TP-03

<b>Project No.:</b>	220154401	<b>Date:</b>	4/3/2025
<b>Project:</b>	Noble Town Center Redevelopment - South Parking	<b>Weather:</b>	Cloudy
<b>Location:</b>	901 Old York Road, Jenkintown, PA 19046	<b>Temperature:</b>	50s °F
<b>Client:</b>	Paramount Realty Services, Inc.	<b>Tested by:</b>	Ed Fitzpatrick

<b>Test Method:</b>	Double-Ring Infiltration Test	<b>Surface Elevation:</b>	about 199 feet
<b>Instrument Diameter:</b>	6-inch diameter inner ring, 12-inch diameter outer ring	<b>Test Depth:</b>	about 3 feet
		<b>Test Elevation:</b>	about 196 feet (NAVD88)

Pre-Soak / Saturation	Time	Time Interval		Initial Water Level (inch)	Final Water Level (inch)	Drop in Water Level (inch)
		(minutes)	(seconds)			
	10:28 AM	30	0	5	0	5
	10:58 AM	30	0	5	3/8	4 5/8

Infiltration Test	Time	Time Interval		Initial Water Level (inch)	Final Water Level (inch)	Drop in Water Level (inch)	Field Intake Rate (inch/hour)
		(minutes)	(seconds)				
	11:15 AM	10	0	5	1 11/16	3 5/16	19.9
	11:27 AM	10	0	5	1 1/4	3 3/4	22.5
	11:39 AM	10	0	5	1/2	4 1/2	27.0
	11:50 AM	10	0	5	11/16	4 5/16	25.9
	12:00 PM	10	0	5	1 3/8	3 5/8	21.8
	12:12 PM	10	0	5	1 3/4	3 1/4	19.5
	12:22 PM	10	0	5	1 3/8	3 5/8	21.8
	12:33 PM	10	0	5	1 15/16	3 1/16	18.4
<b>Observed Field Intake Rate (inch/hour):</b>							18.4

<b>Comments:</b>
Grabbed sample INF-03 at about 3 feet below grade surface.

**ATTACHMENT D  
LABORATORY TEST RESULTS**





**ANS CONSULTANTS, INC.**

4405 South Clinton Avenue  
South Plainfield, NJ 07080

NJ EDA Approved Testing Laboratory • MBE/DBE Certified • NJ DEP Certified  
[www.ANSConsultants.net](http://www.ANSConsultants.net)

Tel: (800) 585-ATUL

(908) 754-8383

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Soil, Concrete, Masonry, Rebar, Asphalt, Structural Steel, Precast, Piles, Caissons, Fire-Proofing, Roofing, Soil Boring, Concrete/Rock Coring,  
UST Removal, Environmental Testing & Reports

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April 16, 2025

Langan Engineering and Environmental Services  
1818 Market St.  
Philadelphia, PA 19103

Attn: Patrick Houston  
Sary Nicolas

Re: Laboratory Test Result  
Langan Engineering and Environmental Services – Noble Town Center Redevelopment – South  
Parking (#220154401)  
Jenkintown, PA  
ANS Project No. AON-1681  
Lab IRN: 25-N-172

Dear Mr. Houston,

Please find attached the laboratory test results. The following testing was conducted on the samples:

1. ASTM D7928 Particle-Size Distribution (Gradation) - Sieve & Hydrometer Analysis (x3 Tests)

Should you have any questions, please do not hesitate to contact the undersigned at 908-754-8383.

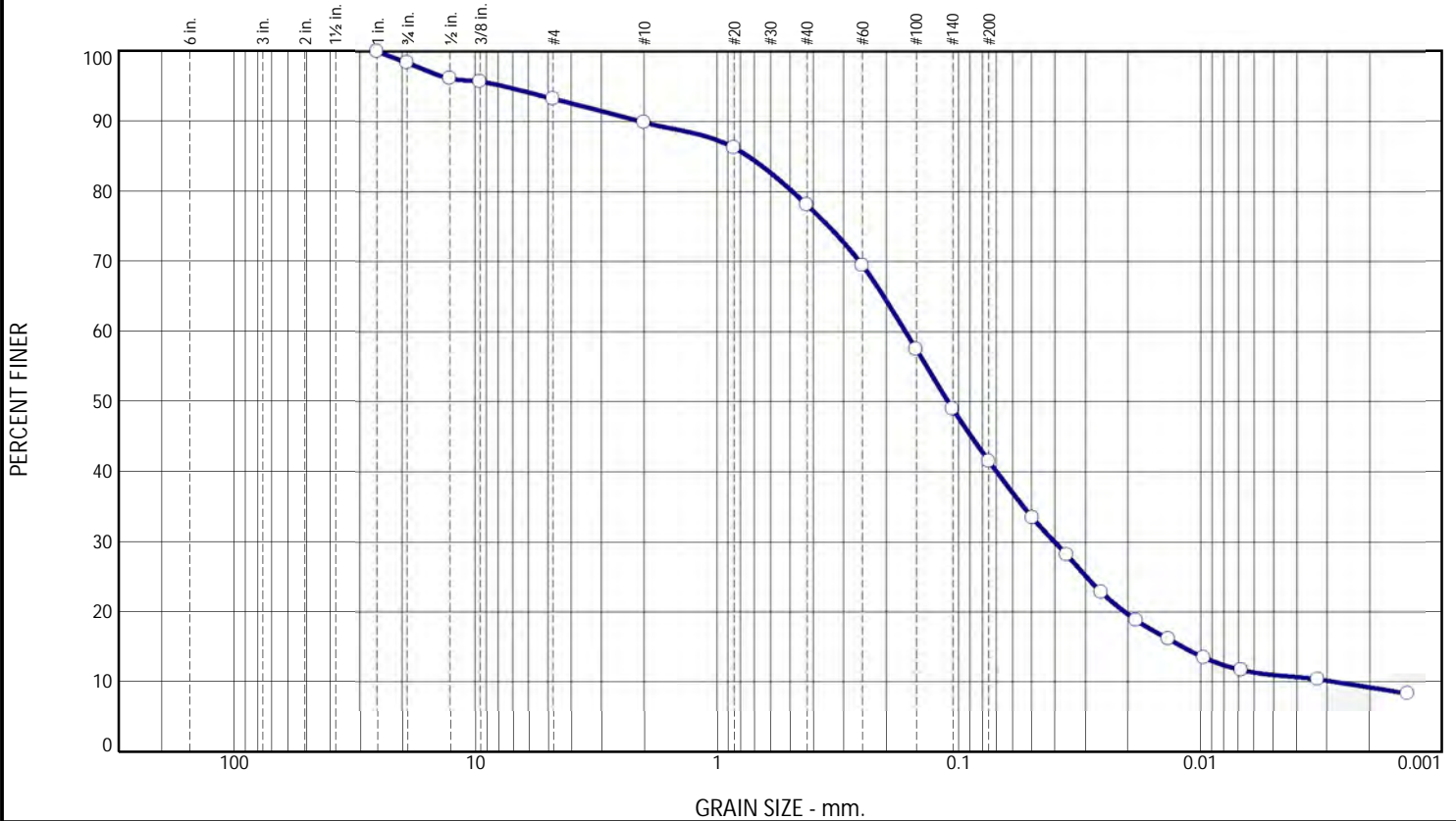
Sincerely,  
ANS Consultants, Inc.

Atulkumar N. Shah, PE, PP, F.ASCE  
President

---

*The laboratory testing conducted by ANS Consultants, Inc. adheres to the applicable ASTM standards and widely accepted industry practices. It is important to note that no other representations or warranties, whether expressed or implied, are provided. ANS Consultants, Inc. assumes no responsibility for the ultimate use and purpose of the tested material. This report is intended solely for the client's use and must not be utilized or relied upon by others. The contents of these documents are considered proprietary information and should not be reproduced without the written consent of ANS Consultants, Inc.*

# PARTICLE SIZE DISTRIBUTION REPORT (ASTM D6913)



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	1.6	5.2	3.3	11.8	36.6	32.3	9.2

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100.0		
0.75"	98.4		
0.5"	96.1		
0.375"	95.7		
#4	93.2		
#10	89.9		
#20	86.3		
#40	78.1		
#60	69.4		
#100	57.5		
#140	49.0		
#200	41.5		
0.0496 mm.	33.4		
0.0357 mm.	28.1		
0.0257 mm.	22.8		
0.0184 mm.	18.8		
0.0136 mm.	16.1		
0.0097 mm.	13.5		
0.0068 mm.	11.7		
0.0033 mm.	10.4		
0.0014 mm.	8.3		

Soil Description

Brown silty sand

PL= NP	<u>Atterberg Limits</u>	PI= NP
	LL= NV	

<u>Coefficients</u>		
D <sub>90</sub> = 2.0657	D <sub>85</sub> = 0.7390	D <sub>60</sub> = 0.1662
D <sub>50</sub> = 0.1108	D <sub>30</sub> = 0.0402	D <sub>15</sub> = 0.0119
D <sub>10</sub> = 0.0028	C <sub>u</sub> = 59.79	C <sub>c</sub> = 3.50

USCS= SM	<u>Classification</u>	AASHTO= A-4(0)
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Remarks

SG Assumed

\* (no specification provided)

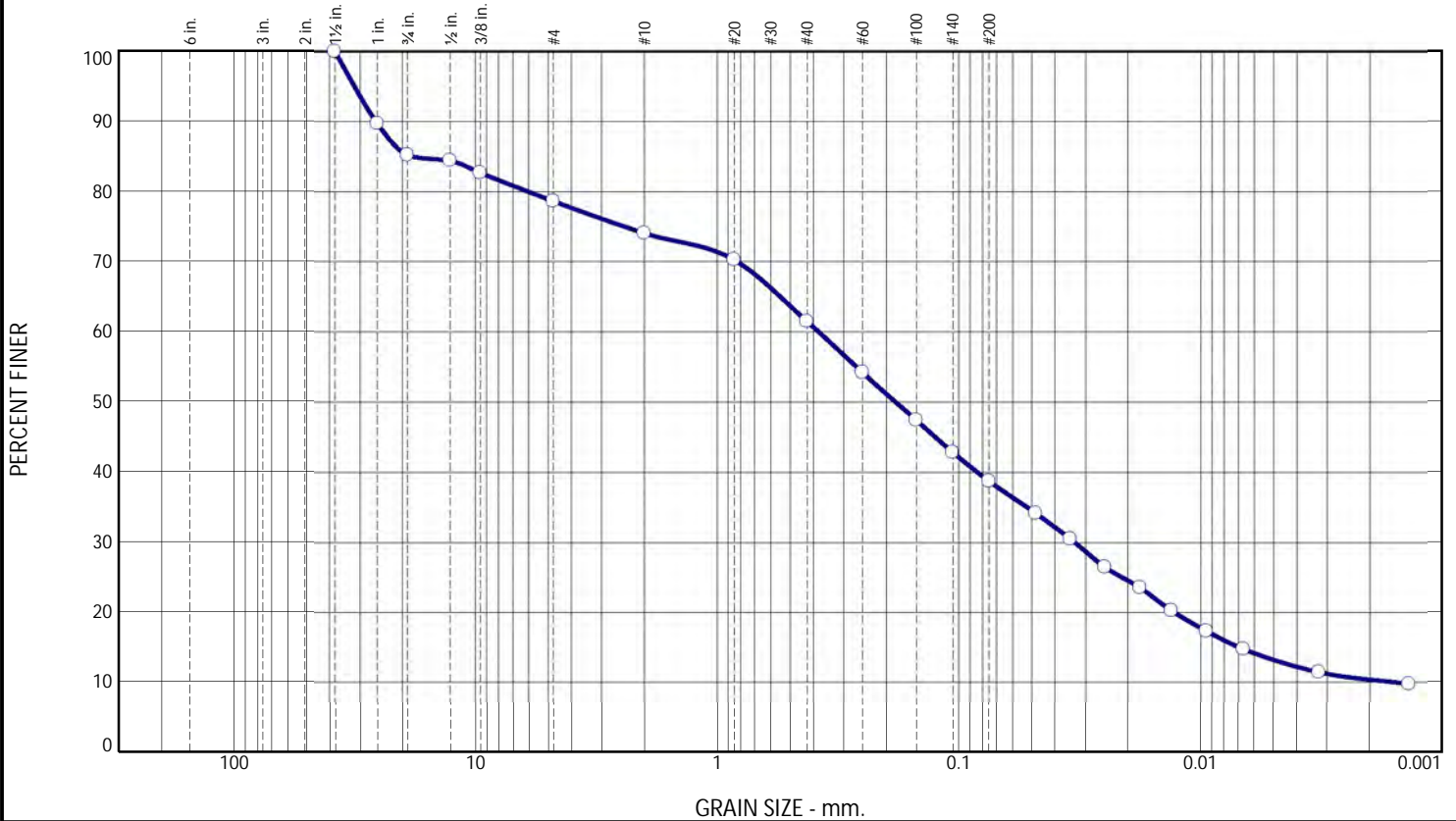
Sample Number: INF-1      Depth: 4.0'

Date: 4/16/2025

<p style="text-align: center; font-weight: bold; font-size: 1.2em;">ANS CONSULTANTS, INC.</p> <p style="text-align: center; font-weight: bold;">South Plainfield, New Jersey</p>	<p>Client: Langan Engineering and Environmental Services</p> <p>Project: Noble Town Center Redevelopment - South Parking, Jenkintown, PA (#220154401)</p> <p>Project No: AON-1681 (25-N-172)</p> <p style="text-align: right;">Figure</p>
--	---

Tested By: KB      Checked By: ANS

# PARTICLE SIZE DISTRIBUTION REPORT (ASTM D6913)



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	14.8	6.6	4.6	12.5	22.8	28.3	10.4

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0		
1"	89.7		
0.75"	85.2		
0.5"	84.4		
0.375"	82.7		
#4	78.6		
#10	74.0		
#20	70.2		
#40	61.5		
#60	54.2		
#100	47.4		
#140	42.9		
#200	38.7		
0.0481 mm.	34.1		
0.0346 mm.	30.5		
0.0249 mm.	26.4		
0.0178 mm.	23.5		
0.0132 mm.	20.2		
0.0095 mm.	17.3		
0.0067 mm.	14.8		
0.0032 mm.	11.5		
0.0014 mm.	9.8		

Soil Description

Brown silty sand with gravel

PL= NP	<u>Atterberg Limits</u>	PI= NP
	LL= NV	

<u>Coefficients</u>		
D <sub>90</sub> = 25.7702	D <sub>85</sub> = 18.1853	D <sub>60</sub> = 0.3812
D <sub>50</sub> = 0.1822	D <sub>30</sub> = 0.0332	D <sub>15</sub> = 0.0069
D <sub>10</sub> = 0.0015	C <sub>u</sub> = 246.25	C <sub>c</sub> = 1.87

USCS= SM	<u>Classification</u>	AASHTO= A-4(0)
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Remarks

SG Assumed  
Undersized Specimen

\* (no specification provided)

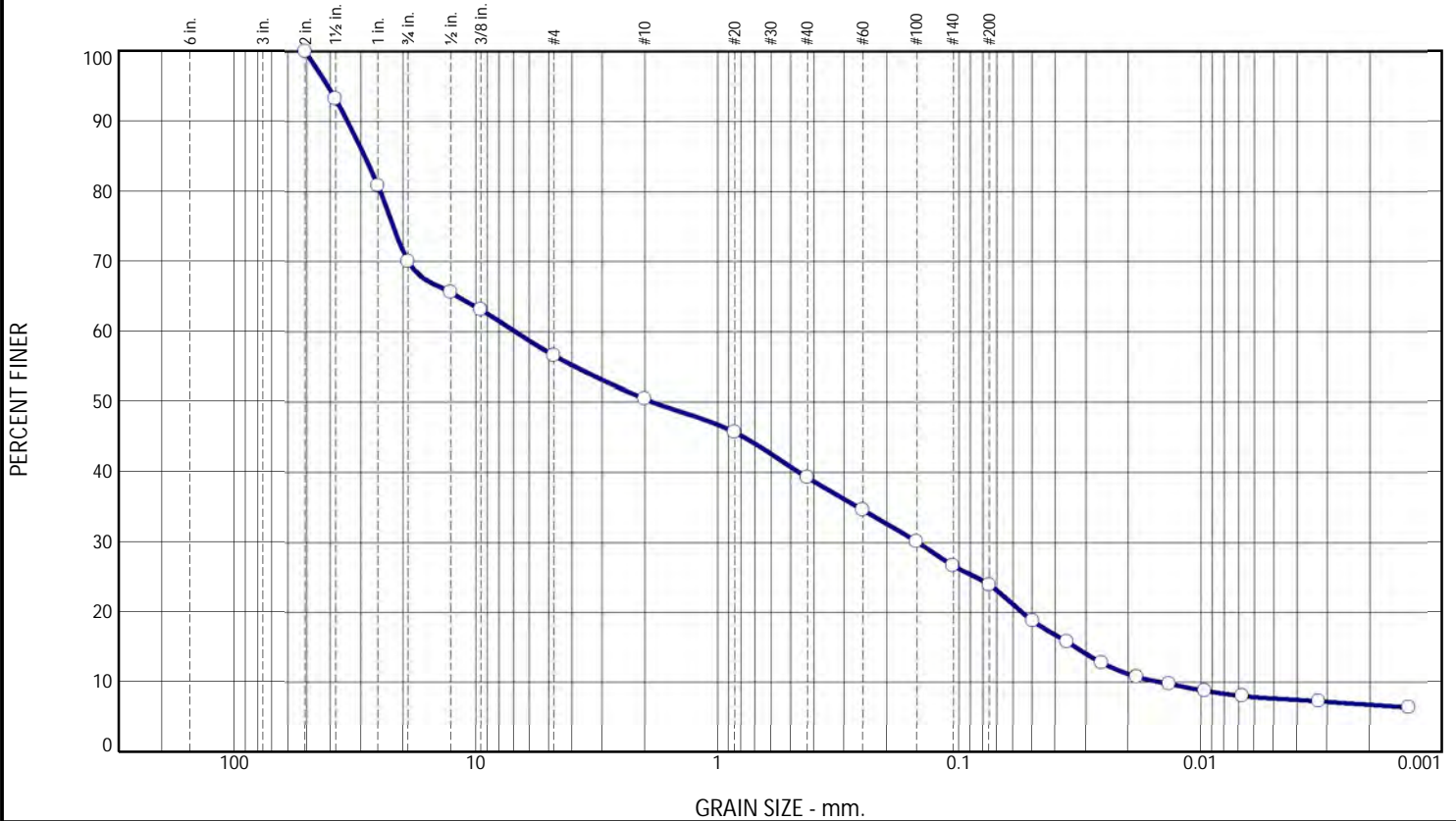
Sample Number: INF-2      Depth: 2.7'

Date: 4/16/2025

<b>ANS CONSULTANTS, INC.</b>  South Plainfield, New Jersey	Client: Langan Engineering and Environmental Services Project: Noble Town Center Redevelopment - South Parking, Jenkintown, PA (#220154401) Project No: AON-1681 (25-N-172)
	Figure

Tested By: AG      Checked By: ANS

# PARTICLE SIZE DISTRIBUTION REPORT (ASTM D6913)



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	30.0	13.4	6.1	11.3	15.3	17.1	6.8

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0		
1.5"	93.2		
1"	80.8		
0.75"	70.0		
0.5"	65.6		
0.375"	63.1		
#4	56.6		
#10	50.5		
#20	45.7		
#40	39.2		
#60	34.6		
#100	30.1		
#140	26.7		
#200	23.9		
0.0496 mm.	18.8		
0.0357 mm.	15.8		
0.0257 mm.	12.8		
0.0184 mm.	10.8		
0.0135 mm.	9.8		
0.0096 mm.	8.8		
0.0067 mm.	8.1		
0.0033 mm.	7.3		
0.0014 mm.	6.4		

\* (no specification provided)

Soil Description

Brown silty gravel with sand

PL= NP	<u>Atterberg Limits</u>	PI= NP
	LL= NV	

<u>Coefficients</u>		
D <sub>90</sub> = 33.9449	D <sub>85</sub> = 28.8113	D <sub>60</sub> = 6.8752
D <sub>50</sub> = 1.8548	D <sub>30</sub> = 0.1486	D <sub>15</sub> = 0.0329
D <sub>10</sub> = 0.0145	C <sub>u</sub> = 474.40	C <sub>c</sub> = 0.22

USCS= GM	<u>Classification</u>	AASHTO= A-1-b
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Remarks

SG Assumed  
Undersized Specimen

Sample Number: INF-3      Depth: 3.0'

Date: 4/16/2025

<p style="text-align: center; font-weight: bold; font-size: 1.2em;">ANS CONSULTANTS, INC.</p> <p style="text-align: center; font-weight: bold; font-size: 1.2em;">South Plainfield, New Jersey</p>	<p>Client: Langan Engineering and Environmental Services</p> <p>Project: Noble Town Center Redevelopment - South Parking, Jenkintown, PA (#220154401)</p> <p>Project No: AON-1681 (25-N-172)</p> <p style="text-align: right;">Figure</p>
--	---

Tested By: AG \_\_\_\_\_ Checked By: ANS \_\_\_\_\_



**JOHN ROCKWELL HOSBACH JR.**

Urban Forester  
Registered Consulting Arborist #483  
ISA Certified Arborist PD-0372

610-731-7969

john@rockwellurbanforestry.com

**Via Email delivery**

October 20, 2025

Ashley McIlvaine | Assistant Township Manager

Township of Abington

1176 Old York Road

Abington, PA 19001

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**NOBLE TOWN CENTER – ABINGTON TOWNSHIP, PA**

**Landscape Review**

**Prepared by:**

John R. Hosbach Jr., RCA, CUCF Forester, ISA Certified Arborist  
Rockwell Associates | Urban Forestry & Landscape Consulting

**ZONING ORDINANCE REVIEW**

**Section 2401 – Preservation and Protection of Existing Vegetation**

**Reference:** Section 2401.A.2.d.(1)(a) – *Existing Lots*

Tree replacement shall occur when new impervious coverage exceeds 500 square feet and a tree with a minimum caliper of six inches (6”) is removed. In such cases, two new trees, each a minimum of 3.0”–3.5” caliper (measured 6” above grade), shall be planted for each tree of 6” caliper or greater that is removed.

**Findings:**

The Existing Conditions Plan does not currently identify all existing trees six inches (6”) in diameter and greater. There appear to be several mature trees within interior landscape islands and adjacent to the proposed retaining wall area that are not shown on the plan. This omission prevents accurate evaluation of tree removal quantities and corresponding replacement requirements.

**Recommendation:**

The Applicant shall revise the Existing Conditions Plan to include all trees measuring six inches (6”) DBH and greater, and clearly delineate those proposed for removal.



**JOHN ROCKWELL HOSBACH JR.**

Urban Forester  
Registered Consulting Arborist #483  
ISA Certified Arborist PD-0372

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✉ john@rockwellurbanforestry.com

A comprehensive Landscape Plan must be submitted showing compliance with the required replacement ratio (2:1), providing new trees of 3.0”–3.5” caliper as required under Section 2401.A.2.d.(1)(a).

All replacement species should be appropriate for urban planting conditions (tolerant of heat, salt, and compacted soils) and reflect long-term sustainability in the parking and streetscape environment.

### **Section 2402 – Parking Lot Landscaping and Street Trees**

#### **Reference:** Section 2402.A – *Parking Lot Landscaping*

Any new or existing parking lot where at least 50% of parking spaces are being developed or modified, or where 15,000 square feet of existing parking area has been altered and contains 50 or more stalls, shall be landscaped per the applicable regulations.

#### **Findings:**

The current submittal lacks a detailed Landscape Plan demonstrating compliance with the interior parking lot landscaping and street tree requirements. Key design elements, such as the number, spacing, and placement of shade trees, as well as interior island planting ratios, are not provided.

#### **Recommendation:**

The Applicant shall submit a Parking Lot Landscape Plan in accordance with Section 2402.A, showing:

- Interior planting islands at appropriate intervals.
- Street tree locations along public rights-of-way.
- Landscape calculations confirming compliance with minimum area and tree count requirements.
- Planting specifications including caliper, species, and root zone protection.



## CHAPTER 146 – SUBDIVISION AND LAND DEVELOPMENT

### Section 146-39 – Landscaping

**Reference:** Section 146-39.B.(3) – *Off-Street Parking Areas*

(a) All off-street parking areas shall be screened per buffer and yard requirements, and must comply with the following interior landscaping standards:

[1] A minimum of 5% of the total parking area (excluding perimeter buffers) shall be devoted to interior landscape islands.

[2] For uses with more than 10 parking stalls, at least one (1) deciduous or evergreen tree of 2.5" caliper shall be planted within the parking area. One (1) additional tree shall be planted for every additional 15 spaces or portion thereof.

(b) This requirement may be met through preservation of existing trees as outlined in Subsection B(4).

#### **Findings:**

The plan must clearly quantify the total parking area, interior landscape area percentage, and number of trees provided versus required. The current drawings do not demonstrate compliance with minimum interior landscaping or tree planting ratios.

#### **Recommendation:**

The Applicant shall revise and resubmit the **Landscape Plan** with the following:

- Calculation of total parking area and confirmation of 5% interior landscape compliance.
- Tree planting schedule with quantity, size, and species that meet Section 146-39 standards.
- Identification of any existing trees proposed for preservation to satisfy tree count requirements.
- Cross-referencing of all landscape areas with grading and utility plans to ensure tree survivability and adequate soil volume.

#### **SUMMARY**

The Applicant shall revise the plans to include:

#### **JOHN ROCKWELL HOSBACH JR.**

Urban Forester  
Registered Consulting Arborist #483  
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# ROCKWELL ASSOCIATES

URBAN FORESTRY, NATURAL RESOURCE & LANDSCAPE CONSULTANTS

## JOHN ROCKWELL HOSBACH JR.

Urban Forester  
Registered Consulting Arborist #483  
ISA Certified Arborist PD-0372

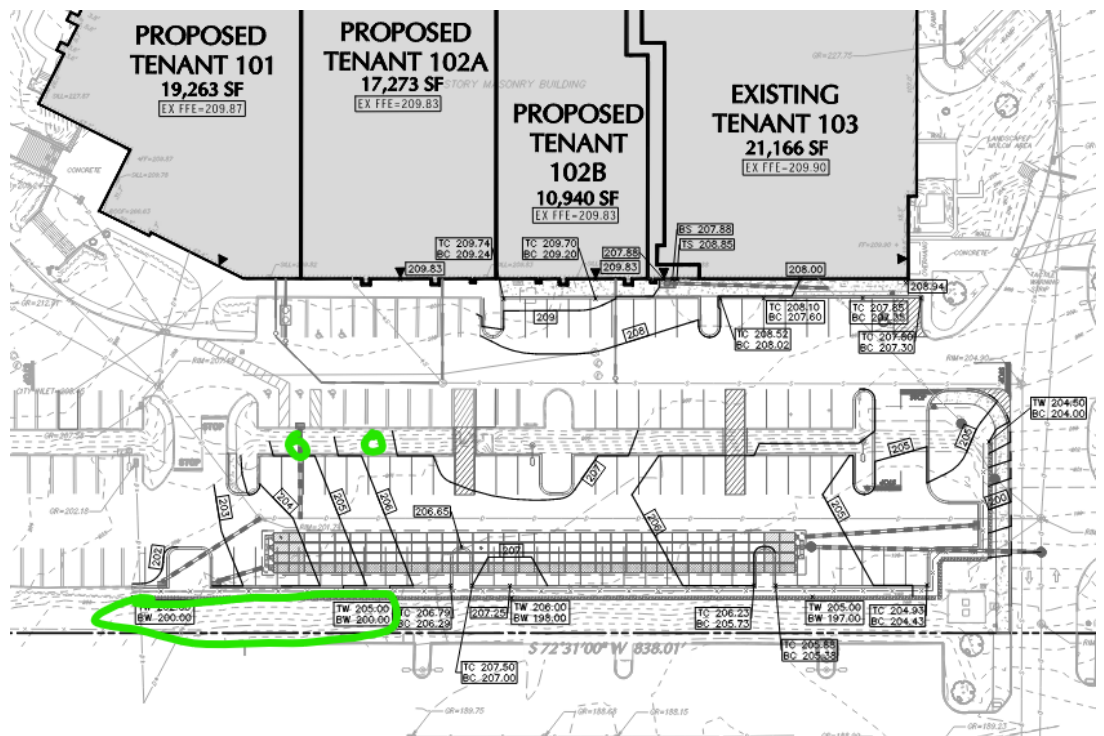
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1. Identification of all existing trees  $\geq 6"$  DBH.
2. A complete Landscape Plan showing required tree replacements (2:1 ratio).
3. Parking lot and street tree landscaping compliant with Section 2402.
4. Interior landscaping calculations per Chapter 146, Section 39.
5. Planting details and species lists suitable for the urban commercial environment.

A revised submission incorporating these requirements should be provided for Township review prior to final approval.

The project involves retrofitting an existing parking lot. There was no landscape plan submitted. The existing condition plan showed a few existing trees but they were not identified by species or caliper. There also appears to be (per Google Maps see below) existing mature trees in the area they are proposing a major retaining wall.






# ROCKWELL ASSOCIATES

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Respectfully Submitted,

*John Rockwell Hosbach Jr.*  
CONSULTANT



PLANNING COMMISSION MEETING

AGENDA ITEM

October 28, 2025

AGENDA ITEM NUMBER

DATE

Administration

DEPARTMENT

FISCAL IMPACT

Cost > \$10,000

Yes  No

PUBLIC BID REQUIRED

Cost > \$20,100

Yes  No

AGENDA ITEM:

SALDO Amendment Authorization of Advertisement

EXECUTIVE SUMMARY:

The SALDO Amendment adds to the Township’s existing processes for waivers from land development. This process would be solely applicable for reconstructions of nonconforming structures housing conforming uses that were destroyed (greater than 50% of value) in a catastrophic event. The process requires compliance with all zoning, building and other code standards, as applicable, and only permits the process to be applied where the reconstruction would not otherwise increase the impact on the surrounding community. The intention of this process is that reconstruction most often does not require the extensive analysis for earth-moving and stormwater since the site is already developed. This process provides oversight for redevelopment without putting an Applicant through a process not designed for rebuilding. The right to a waiver is in the sole discretion of the Board of Commissioners and need not be granted if the Board determines that land development should be required based on the scale and scope of the project.

PREVIOUS BOARD ACTIONS:

n/a

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*RECOMMENDED BOARD ACTIONS:*

Discuss an Ordinance of Abington Township, Montgomery County, Pennsylvania, pursuant to Article V of the Pennsylvania Municipalities Planning Code amending the Abington Township Subdivision and Land Development Ordinance of 1991 to amend Section 146-51 to permit a waiver from the Land Development Plan approval process for a partial nonconforming structure restoration.

ABINGTON TOWNSHIP  
MONTGOMERY COUNTY, PENNSYLVANIA

**AN ORDINANCE OF ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA, PURSUANT TO ARTICLE V OF THE PENNSYLVANIA MUNICIPALITIES PLANNING CODE AMENDING THE ABINGTON TOWNSHIP SUBDIVISION AND LAND DEVELOPMENT ORDINANCE OF 1991 TO AMEND SECTION 146-51 TO PERMIT A WAIVER FROM THE LAND DEVELOPMENT PLAN APPROVAL PROCESS FOR A PARTIAL NONCONFORMING STRUCTURE RESTORATION**

BE IT HEREBY ORDAINED AND ENACTED by the Board of Commissioners of Abington Township, Montgomery County as follows:

**Section 1.** Article VIII Modification and Validity, Section 146-51 of the Abington Township Subdivision and Land Development Ordinance is hereby amended by adding the following subsection M as follows:

M. A landowner seeking a Partial Nonconforming Structure Restoration (as defined by Article XIX, Section 1904 of the Abington Township Zoning Ordinance) shall be permitted to apply to the Abington Township Board of Commissioners for a waiver of the Land Development Approval process where all of the following criteria are satisfied:

- (1) The reconstructed building complies with applicable building setbacks;
- (2) The reconstructed building and associated reconstructed improvements comply with applicable impervious coverage, building coverage and green area requirements;
- (3) The reconstructed building and/or accessory structures thereto comply with applicable building height requirements;
- (4) The reconstructed building and associated reconstructed improvements comply with current stormwater management regulations;
- (5) The reconstructed building and associated reconstructed improvements comply with current lighting requirements;
- (6) The reconstructed building and associated reconstructed improvements do not modify or relocate any access points to public roads nor increase the peak hour traffic volumes generated by the use; and
- (7) The reconstructed building complies with all applicable building codes.

An applicant for a waiver of the land development approval process for a Partial Nonconforming Structure Restoration shall comply with the requirements of Subsections A through I above except to the extent modified below. The criteria for the grant of a waiver set forth in Subsection J shall not apply. A waiver of the Land Development Approval process shall be in the sole discretion of the Abington Township Board of Commissioners.

In addition to the submission requirements set forth in Subsection A, Applicant shall submit Architectural renderings and/or elevations of the project. If approved, Applicant shall be required to construct the project in substantial conformity with the elevations and/or renderings.

If the project proposes improvements that would otherwise require execution of a developer's agreement and the posting of financial security to guarantee the completion of public and/or quasi-public improvements, an Applicant may be required to execute all otherwise required Township agreements (e.g. developer's agreement, stormwater management BMP agreement, financial security agreement), and post financial security guaranteeing completion of all required public and quasi-public improvements.

**Section 2. SEVERABILITY.** The provisions of this Ordinance are severable and if any section, sentence, clause, part or provision herein shall be held illegal, invalid, or unconstitutional, it shall not affect or impair the remaining provisions of this Code.

**Section 3. APPLICABILITY.** All ordinances or parts of ordinances inconsistent herewith are hereby repealed to the extent of any inconsistency.

**Section 4. EFFECTIVE DATE.** This Ordinance shall become effective five (5) days after adoption.

**ENACTED and ORDAINED this \_\_\_\_\_ day of \_\_\_\_\_, 2025.**

**ATTEST**

\_\_\_\_\_

**ABINGTON TOWNSHIP  
BOARD OF COMMISSIONERS**

**By:** \_\_\_\_\_

**MONTGOMERY COUNTY  
BOARD OF COMMISSIONERS**

NEIL K. MAKHIJA, CHAIR  
JAMILA H. WINDER, VICE CHAIR  
THOMAS DIBELLO, COMMISSIONER

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**MONTGOMERY COUNTY  
PLANNING COMMISSION**

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SCOTT FRANCE, AICP  
EXECUTIVE DIRECTOR

October 23, 2025

Mr. Christopher S. Christman, Manager  
Abington Township  
1176 Old York Road  
Abington, Pennsylvania 19001-3713

Re: MCPC #25-0220-001  
Ordinance Text Amendment: Land Development Plan Process Waiver  
Abington Township

Dear Mr. Christman:

We have reviewed the above-referenced subdivision and land development ordinance text amendment in accordance with Section 609 of Act 247, "The Pennsylvania Municipalities Planning Code," as you requested on October 14, 2025. We forward this letter as a report of our review.

## BACKGROUND

The township has submitted a proposed subdivision and land development (SALDO) text amendment that would allow landowners seeking a partial nonconforming structure restoration to apply to the township's Board of Commissioners for a waiver of land development, when meeting certain criteria.

## RECOMMENDATION

The Montgomery County Planning Commission (MCPC) generally supports the applicant's proposal as we have found it to be generally consistent with the township and county comprehensive plans. However, in the course of our review we have identified the following issue that the applicant and township may wish to consider prior to final plan approval. Our comments are as follows:

## REVIEW COMMENTS

### TIMELINE

The Municipalities Planning Code includes timelines that provide a guarantee to the applicant that a municipality will act upon an application in a timely manner. The land development waiver regulations currently in the Abington SALDO that are proposed to apply to partial nonconforming structure restorations do not have a time limit, before which the Township Board of Commissioners must act on a land development application. There is a time limit in the SALDO before which the Township Planning Commission must act on an application. If the intent



of the proposed text amendment is to expedite redevelopment, the township may wish to consider also adding a time limit on Board of Commissioners action, thereby providing reassurance to an applicant that their land development waiver request will be acted upon by the Board of Commissioners within a set time period.

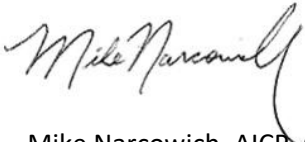
## CONCLUSION

We wish to reiterate that MCPC generally supports the applicant's proposal, but we believe that our suggested revisions will better achieve the township's planning objectives for plan processing.

Please note that the review comments and recommendations contained in this report are advisory to the municipality and final disposition for the approval of any proposal will be made by the municipality.

Should the governing body adopt this proposed subdivision and land development ordinance amendment, Section 609 of the Municipalities Planning Code requires that we be sent an official copy within 30 days.

Sincerely,



Mike Narcowich, AICP, Community Planning Assistant Manager II  
610.278.5238 – [michael.narcowich@montgomerycountypa.gov](mailto:michael.narcowich@montgomerycountypa.gov)

- c: Nicholas Brown, Chair, Township Planning Commission
- Khaled R. Hassan, P.E., Pennoni, Township Engineer
- Allison A. Lee, P.E., Pennoni, Township Engineer
- Michael P. Clarke, Esq., Rudolph Clarke, LLC, Township Solicitor
- Greg R. Heleniak, Esq., Rudolph Clarke, LLC, Township Solicitor



PLANNING COMMISSION MEETING

AGENDA ITEM

October 28, 2025

DATE

Administration

DEPARTMENT

AGENDA ITEM NUMBER

FISCAL IMPACT

Cost > \$10,000

Yes  No

PUBLIC BID REQUIRED

Cost > \$20,100

Yes  No

AGENDA ITEM:

Zoning Amendment Authorization of Advertisement

EXECUTIVE SUMMARY:

The Zoning Amendment would address a weakness in the Zoning Code related to reconstruction of nonconforming structures destroyed (greater than 50% of value) by a catastrophic event. The amendment would leave intact the restrictions on re-establishment of a nonconforming use as well as the option to rebuild where less than 50% of value of a nonconforming structure housing a conforming use is affected. However, where a conforming use is housed in a nonconforming structure that was subsequently destroyed (greater than 50% of value) in a catastrophic event, the amendment would provide an opportunity to rebuild up to 75% of the previous gross floor area. No nonconformities are permitted to be expanded. The nonconforming rebuild must also be initiated within 18 months of the catastrophic event. This amendment also references a Partial Nonconforming Structure Waiver, which is the subject of the proposed SALDO amendment.

PREVIOUS BOARD ACTIONS:

n/a

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*RECOMMENDED BOARD ACTIONS:*

Discuss an Ordinance of Abington Township, Montgomery County, Pennsylvania, pursuant to Article VI of the Pennsylvania Municipalities Planning Code amending the Abington Township Zoning Ordinance of 2017 to amend Section 1904 to allow partial reconstruction of a non-conforming building or structure for a permitted use.

ORDINANCE NO. \_\_\_\_\_

ABINGTON TOWNSHIP  
MONTGOMERY COUNTY, PENNSYLVANIA

AN ORDINANCE OF ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA, PURSUANT TO ARTICLE VI OF THE PENNSYLVANIA MUNICIPALITIES PLANNING CODE AMENDING THE ABINGTON TOWNSHIP ZONING ORDINANCE OF 2017 TO AMEND SECTION 1904 TO ALLOW PARTIAL RECONSTRUCTION OF A NON-CONFORMING BUILDING OR STRUCTURE FOR A PERMITTED USE

BE IT HEREBY ORDAINED AND ENACTED by the Board of Commissioners of Abington Township, Montgomery County as follows:

**Section 1.** Article XIX Nonconforming Uses, Structures, Lots and Signs, Section 1904 Reconstruction of the Abington Township Zoning Ordinance hereby amended by replacing in its entirety subsection A with the following:

A. When a nonconforming building or structure is destroyed or partially destroyed by fire, explosion, or other disaster, or is otherwise damaged to the extent of 50% or more of the appraised replacement value of such building or structure the following shall apply:

(1) Where the use of such structure prior to the fire, explosion or other disaster did not conform to the use regulations of the district in which it is located, such nonconforming building or structure shall not be restored or rebuilt, except in such a manner as to conform with the regulations of this Ordinance, and amendments thereto.

(2) Where the use of such structure prior to the fire, explosion or other disaster conformed to the use regulations of the district in which it is located, such nonconforming building or structure may be restored or rebuilt up to 75% of the gross floor area of such structure as it existed prior to the fire, explosion or other disaster provided such rebuilt or restored building does not increase the extent of any of the prior nonconformities (hereinafter referred to as a “**Partial Nonconforming Structure Restoration**”). A landowner seeking a Partial Nonconforming Structure Restoration must apply for a building permit within eighteen (18) months of the fire, explosion or other disaster.

When a nonconforming building or structure is partially destroyed by fire, explosion or other disaster to less than 50% of its appraised replacement value, it may be restored to its original use in accordance with provisions of this Ordinance, but must be restored within one year of such event, and the use shall not be enlarged.

**Section 2. SEVERABILITY.** The provisions of this Ordinance are severable and if any section, sentence, clause, part or provision herein shall be held illegal, invalid, or unconstitutional, it shall not affect or impair the remaining provisions of this Code.

**Section 3. APPLICABILITY.** All ordinances or parts of ordinances inconsistent herewith are hereby repealed to the extent of any inconsistency.

**Section 4. EFFECTIVE DATE.** This Ordinance shall become effective five (5) days after adoption.

**ENACTED and ORDAINED this \_\_\_\_\_ day of \_\_\_\_\_, 2025.**

**ATTEST**

**ABINGTON TOWNSHIP  
BOARD OF COMMISSIONERS**

\_\_\_\_\_

**By:** \_\_\_\_\_

**MONTGOMERY COUNTY  
BOARD OF COMMISSIONERS**

NEIL K. MAKHIJA, CHAIR  
JAMILA H. WINDER, VICE CHAIR  
THOMAS DIBELLO, COMMISSIONER

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SCOTT FRANCE, AICP  
EXECUTIVE DIRECTOR

October 23, 2025

Mr. Christopher S. Christman, Manager  
Abington Township  
1176 Old York Road  
Abington, Pennsylvania 19001-3713

Re: MCPC #25-0219-001  
Zoning Text Amendment: Partial Reconstruction of Nonconforming Building/Structure  
Abington Township

Dear Mr. Christman:

We have reviewed the above-referenced zoning text amendment in accordance with Section 609 of Act 247, "The Pennsylvania Municipalities Planning Code," as you requested on October 14, 2025. We forward this letter as a report of our review.

## BACKGROUND

The township has submitted a proposed zoning text amendment that would provide conditions under which a nonconforming building or structure could be reconstructed, where the reconstruction would comprise at least 50 percent, but no more than 75 percent, of the appraised replacement value. This would be known as a "partial nonconforming structure restoration."

## RECOMMENDATION

The Montgomery County Planning Commission (MCPC) supports the applicant's proposal without comment as we found it to be generally consistent with the township and county comprehensive plans.

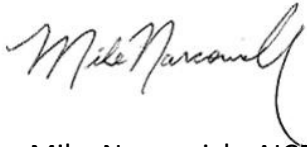
## CONCLUSION

Please note that the review comments and recommendations contained in this report are advisory to the municipality and final disposition for the approval of any proposal will be made by the municipality.



Should the governing body adopt this proposed subdivision and land development ordinance amendment, Section 609 of the Municipalities Planning Code requires that we be sent an official copy within 30 days.

Sincerely,

A handwritten signature in black ink that reads "Mike Narcowich". The signature is written in a cursive style with a long, sweeping tail that loops back under the name.

Mike Narcowich, AICP, Community Planning Assistant Manager II  
610.278.5238 – [michael.narcowich@montgomerycountypa.gov](mailto:michael.narcowich@montgomerycountypa.gov)

- c: Nicholas Brown, Chair, Township Planning Commission
- Khaled R. Hassan, P.E., Pennoni, Township Engineer
- Allison A. Lee, P.E., Pennoni, Township Engineer
- Michael P. Clarke, Esq., Rudolph Clarke, LLC, Township Solicitor
- Greg R. Heleniak, Esq., Rudolph Clarke, LLC, Township Solicitor

